Azithromycin

Indications/Dosage

expand all | collapse all

Labeled

- bacterial conjunctivitis
- bronchitis
- chancroid
- chlamydia infection
- community-acquired pneumonia
- gonorrhea
- Mycobacterium avium complex (MAC) prophylaxis
- Mycobacterium avium complex infection
- non-gonococcal urethritis (NGU)
- otitis media
- pelvic inflammatory disease (PID)
- pharyngitis
- pneumonia
- sinusitis
- skin and skin structure infections
- tonsillitis

Off-Label

- asthma maintenance †
- babesiosis †
- bartonellosis †
- bartonellosis prophylaxis †
- campylobacteriosis †
- chlamydial infection prophylaxis †
- cholera †
- coronavirus disease 2019 (COVID-19) †
- cystic fibrosis †
- dental abscess (apical) †
- dental abscess (periapical) †
- dental infection †
- dentoalveolar infection †
- endocarditis prophylaxis †
- gonorrhea prophylaxis †
- granuloma inguinale †
- Lyme disease †
- lymphogranuloma venereum †
- ophthalmia neonatorum †
- pertussis (whooping cough) †
- pertussis prophylaxis †
- rheumatic fever prophylaxis †
- severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection †
- shigellosis †
- syphilis †
- traveler's diarrhea †
- typhoid fever †

† Off-label indication

Per the manufacturer, this drug has been shown to be active against most strains of the following microorganisms either in vitro and/or in clinical infections:

Bacteroides bivius, *Bordetella pertussis*, *Borrelia burgdorferi*, *Campylobacter jejuni*, *CDC coryneform group G*, *Chlamydia trachomatis*, *Chlamydophila pneumoniae*, *Clostridium perfringens*, *Haemophilus ducreyi*, *Haemophilus influenzae (beta-lactamase negative)*, *Haemophilus influenzae (beta-lactamase positive)*, *Legionella pneumophila*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium intracellulare*, *Mycoplasma hominis*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Peptostreptococcus sp.*, *Prevotella bivia*, *Staphylococcus aureus (MSSA)*, *Streptococcus agalactiae (group B streptococci)*, *Streptococcus mitis*, *Streptococcus pneumoniae*, *Streptococcus pyogenes (group A beta-hemolytic streptococci)*, *Streptococcus sp.*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Viridans streptococci*.

NOTE: The safety and effectiveness in treating clinical infections due to organisms with in vitro data only have not been established in adequate and well-controlled clinical trials.

This drug may also have activity against the following microorganisms:

Bacillus anthracis, *Gardnerella vaginalis*, *Helicobacter pylori*, *Klebsiella granulomatis*, *Mycoplasma genitalium*, *Rickettsia tsutsugamushi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Streptococcus sp. (Group C)*, *Streptococcus sp. (Group F)*, *Streptococcus sp. (Group G)*, *Toxoplasma gondii*, *Vibrio cholerae*.

NOTE: Some organisms may not have been adequately studied during clinical trials; therefore, exclusion from this list does not necessarily negate the drug's activity against the organism.

INVESTIGATIONAL USE: For adjunctive use in the treatment of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection†, the virus that causes coronavirus disease 2019 (COVID-19)†

Oral dosage (immediate-release)

- **Adults**

  Data are limited and inconclusive. Due to the potential for toxicities, the National Institutes of Health (NIH) COVID-19 treatment guidelines recommend against the use of azithromycin in combination with hydroxychloroquine outside of clinical trials.[65314] Azithromycin is being used in some COVID-19 institutional protocols. 500 mg PO on day 1 then 250 mg PO once daily for 5 days was administered in combination with hydroxychloroquine in a small study. On day 6, all patients treated with hydroxychloroquine and azithromycin (n = 6) were virologically cured compared to 57.1% of patients treated with hydroxychloroquine alone (n= 20).[65147] Another small study (n = 11) reviewed the same azithromycin plus hydroxychloroquine regimen and found nasopharyngeal swabs were still positive for SARS-CoV-2 in 8 of 10 patients at 5 to 6 days after treatment initiation.[65198] In a retrospective analysis of a multicenter cohort study (n = 349) in patients with Middle East Respiratory Syndrome Coronavirus (MERS-CoV), 136 patients received macrolide therapy in combination with antiviral treatment. Macrolide therapy was not associated with a reduction in 90-day mortality compared to the control group (adjusted OR: 0.84; 95% CI: 0.47 to 1.51; p = 0.56).[65149]

For the treatment of community-acquired pneumonia (CAP)

Oral dosage (immediate-release)

- **Outpatient Adults**

500 mg PO on day 1, followed by 250 mg PO once daily for at least 5 days as monotherapy for patients without comorbidities or risk factors for MRSA or *P. aeruginosa* and as part of combination therapy for patients with comorbidities. Guide treatment duration by clinical stability.[28855] [34362] [64669] FDA-approved labeling recommends a 5-day treatment course.[28855]

- **Hospitalized Adults**

  500 mg PO once daily for at least 5 days as part of combination therapy. Guide treatment duration by clinical stability.[34362] [64669]

- **Adolescents**

  10 mg/kg/dose (Max: 500 mg/dose) PO for 1 day, followed by 5 mg/kg/dose (Max: 250 mg/dose) PO once daily for 4 days.[28855] Guidelines recommend azithromycin as oral step-down therapy or as initial oral therapy in patients with atypical pathogens and as part of combination therapy for HIV-infected patients.[34362] [46963]

- **Infants and Children 6 months to 12 years**

  10 mg/kg/dose (Max: 500 mg/dose) PO for 1 day, followed by 5 mg/kg/dose (Max: 250 mg/dose) PO once daily for 4 days.[28855] Guidelines recommend azithromycin as oral step-down therapy or as initial oral therapy in patients with atypical pathogens and as part of combination therapy for hospitalized HIV-infected patients.[34361] [46963]

- **Infants 3 to 5 months†**

  10 mg/kg/dose PO for 1 day, followed by 5 mg/kg/dose PO once daily for 4 days. Guidelines recommend azithromycin as oral step-down therapy or as initial oral therapy in patients with atypical pathogens and as part of combination therapy for hospitalized HIV-infected patients.[34361] [46963]

Oral dosage (extended-release)

- **Adults**

  2 g PO as a single dose. This dosage form is not recommended for patients with moderate or severe illness or those with other underlying risk factors for which oral therapy is inappropriate.[34473]

- **Infants, Children, and Adolescents 6 months to 17 years**

  60 mg/kg/dose (Max: 2 g/dose) PO as a single dose. This dosage form is not recommended for patients with moderate or severe illness or those with other underlying risk factors for which oral therapy is inappropriate.[34473]

Intravenous dosage

- **Adults**

  500 mg IV once daily for at least 5 days as part of combination therapy for hospitalized patients. Guide treatment duration by clinical stability.[34362] [64669] FDA-approved labeling recommends IV therapy for at least 2 days then step-down to oral therapy to complete a 7- to 10-day treatment course. The switch to oral therapy should be done at the discretion of the physician and based on the clinical response of the patient.[43974]

- **Adolescents 16 to 17 years**

500 mg IV once daily for at least 2 days, followed by oral therapy to complete a 7- to 10-day treatment course. [43974] Guidelines recommend azithromycin as monotherapy for definitive atypical pneumonia and as part of combination therapy for hospitalized patients, including HIV-infected patients, when atypical pathogens are suspected.[34362] [46963]

- **Infants, Children, and Adolescents 3 months to 15 years†**

  10 mg/kg/dose (Max: 500 mg/dose) IV once daily for 2 days, followed by oral therapy to complete a 5-day treatment course. Guidelines recommend azithromycin as monotherapy for definitive atypical pneumonia and as part of combination therapy for hospitalized patients, including HIV-infected patients, when atypical pathogens are suspected.[34361] [34362] [46963]

For the treatment of acute bacterial exacerbations of chronic bronchitis

Oral dosage (immediate-release)

- **Adults**

  500 mg PO once daily for 3 days, or 500 mg PO once daily for 1 day followed by 250 mg PO once daily for 4 days.[28855]

For the treatment of group A beta-hemolytic streptococcal (GAS) pharyngitis (primary rheumatic fever prophylaxis†) and tonsillitis

NOTE: Guidelines recommend azithromycin for secondary rheumatic fever prophylaxis in patients allergic to penicillin or sulfadiazine, although no dosage recommendations are given. Secondary prophylaxis is recommended for 10 years or until age 40 (whichever is longer) in patients who have experienced rheumatic fever with carditis and have residual heart disease (persistent valvular disease); for 10 years or until age 21 (whichever is longer) in patients who have experienced rheumatic fever with carditis, but have no residual heart disease; and for 5 years or until age 21 (whichever is longer) in patients who have experienced rheumatic fever without carditis.[35507]

Oral dosage (immediate-release)

- **Adults**

  500 mg PO once daily for 5 days as an alternative in patients allergic to penicillin is recommended in guidelines.[35507] [52889] The FDA-approved dose is 500 mg PO once daily for 1 day, followed by 250 mg PO once daily for 4 days.[28855]

- **Children and Adolescents 2 to 17 years**

  12 mg/kg/dose (Max: 500 mg/dose) PO once daily for 5 days as an alternative in patients allergic to penicillin. [28855] [35507] [52889]

- **Infants† and Children 1 year†**

  12 mg/kg/dose PO once daily for 5 days as an alternative in patients allergic to penicillin.[35507] [52889]

For the treatment of acute bacterial sinusitis

Oral dosage (immediate-release)

- **Adults**

  500 mg PO once daily for 3 days.[28855] Due to the high rate of resistance among *S. pneumoniae* isolates, macrolides are not recommended as empiric therapy.[49853]

- **Infants, Children, and Adolescents 6 months to 17 years**

  10 mg/kg/dose (Max: 500 mg/dose) PO once daily for 3 days.[28855] Due to the high rate of resistance among *S. pneumoniae* isolates, macrolides are not recommended as empiric therapy.[49853]

Oral dosage (extended-release)

- **Adults**

  2 g PO as a single dose.[34473] Due to the high rate of resistance among *S. pneumoniae* isolates, macrolides are not recommended as empiric therapy.[49853]

For the treatment of acute otitis media

Oral dosage (immediate-release)

- **Infants, Children, and Adolescents 6 months to 17 years**

  30 mg/kg/dose (Max: 1,500 mg/dose) PO as a single dose, or 10 mg/kg/dose (Max: 500 mg/dose) PO once daily for 3 days, or 10 mg/kg/dose (Max: 500 mg/dose) PO once daily for 1 day, followed by 5 mg/kg/dose (Max: 250 mg/dose) PO once daily for 4 days.[28855] Because macrolides have limited efficacy against both *H. influenzae* and *S. pneumoniae*, these agents are not included in guidelines.[53345]

For the treatment of bacterial conjunctivitis

Ophthalmic dosage

- **Adults**

  1 drop in the affected eye(s) twice daily (8 to 12 hours apart) for 2 days, then 1 drop in the affected eye(s) once daily for 5 days.[43976]

- **Children and Adolescents**

  1 drop in the affected eye(s) twice daily (8 to 12 hours apart) for 2 days, then 1 drop in the affected eye(s) once daily for 5 days.[43976]

For the treatment of skin and skin structure infections

for the treatment of uncomplicated skin and skin structure infections

Oral dosage (immediate-release)

- **Adults**

  500 mg PO once daily for 1 day, followed by 250 mg PO once daily for 4 days.[28855]

for the treatment of cat scratch disease†

Oral dosage (immediate-release)

- **Adults weighing 45 kg or more**

  500 mg PO once daily for 1 day, followed by 250 mg PO once daily for 4 days.[57437]

- **Adults weighing less than 45 kg**

  10 mg/kg/dose PO once daily for 1 day, followed by 5 mg/kg/dose PO once daily for 4 days.[57437]

For the treatment of pelvic inflammatory disease (PID)

Intravenous dosage

- **Adults**

  500 mg IV once daily for 1 to 2 days, followed by oral therapy. Consider adding metronidazole or other anaerobic therapy.[43974] [59799]

- **Adolescents 16 to 17 years**

  500 mg IV once daily for 1 to 2 days, followed by oral therapy. Consider adding metronidazole or other anaerobic therapy.[43974] [59799]

- **Adolescents 13 to 15 years**†

  500 mg IV once daily for 1 to 2 days, followed by oral therapy. Consider adding metronidazole.[59799]

Oral dosage (immediate-release)

- **Adults**

  250 mg PO once daily for 7 to 14 days after IV therapy. Consider adding metronidazole or other anaerobic therapy.[43974] [59799] Alternatively, 1 g PO once weekly for 2 weeks plus a single dose of ceftriaxone.[59799]

- **Adolescents 16 to 17 years**

  250 mg PO once daily for 7 to 14 days after IV therapy. Consider adding metronidazole or other anaerobic therapy.[43974] [59799] Alternatively, 1 g PO once weekly for 2 weeks plus a single dose of ceftriaxone.[59799]

- **Adolescents 13 to 15 years**†

  250 mg PO once daily for 12 to 14 days after IV therapy. Consider adding metronidazole. Alternatively, 1 g PO once weekly for 2 weeks plus a single dose of ceftriaxone.[59799]

For the treatment of gonorrhea

for the treatment of uncomplicated gonorrhea of the cervix, urethra, rectum, or pharynx

Oral dosage (immediate-release)

- **Adults**

  1 g PO as a single dose plus ceftriaxone or cefixime.[59799] The FDA-approved dose is 2 g PO as a single dose.[28855] However, azithromycin monotherapy is no longer recommended.[59799]

- **Adolescents†**

  1 g PO as a single dose plus ceftriaxone or cefixime.[59799]

- **Children weighing more than 45 kg†**

  1 g PO as a single dose plus ceftriaxone or cefixime.[59799]

for the treatment of gonorrhea of the cervix, urethra, rectum, or pharynx in patients with cephalosporin allergy or previous treatment failure

Oral dosage (immediate-release)

- **Adults**

  2 g PO as a single dose as part of combination therapy. Azithromycin plus gemifloxacin or gentamicin may be considered for patients with severe cephalosporin allergy or treatment failure after retreatment with a preferred regimen. Use azithromycin plus ceftriaxone if treatment failure after treatment with the alternative regimen of azithromycin plus cefixime.[59799] In patients with cephalosporin-resistant *N. gonorrhoeae* who have failed high-dose ceftriaxone, may consider azithromycin plus either gentamicin or spectinomycin. Appropriate treatment of sexual partners is necessary.[50624]

- **Adolescents†**

  2 g PO as a single dose as part of combination therapy. Azithromycin plus gemifloxacin or gentamicin may be considered for patients with severe cephalosporin allergy or treatment failure after retreatment with a preferred regimen. Use azithromycin plus ceftriaxone if treatment failure after treatment with the alternative regimen of azithromycin plus cefixime.[59799] In patients with cephalosporin-resistant *N. gonorrhoeae* who have failed high-dose ceftriaxone, may consider azithromycin plus either gentamicin or spectinomycin. Appropriate treatment of sexual partners is necessary.[50624]

- **Children weighing more than 45 kg†**

  2 g PO as a single dose as part of combination therapy. Azithromycin plus gemifloxacin or gentamicin may be considered for patients with severe cephalosporin allergy or treatment failure after retreatment with a preferred regimen. Use azithromycin plus ceftriaxone if treatment failure after treatment with the alternative regimen of azithromycin plus cefixime.[59799] In patients with cephalosporin-resistant *N. gonorrhoeae* who have failed high-dose ceftriaxone, may consider azithromycin plus either gentamicin or spectinomycin. Appropriate treatment of sexual partners is necessary.[50624]

for the treatment of disseminated (e.g., bacteremia, arthritis) gonococcal infection†, including meningitis† and endocarditis†

Oral dosage (immediate-release)

- **Adults**

  1 g PO as a single dose as part of combination therapy. Treat with the combination drug for at least 7 days for arthritis or arthritis-dermatitis syndrome, 10 to 14 days for meningitis, and at least 4 weeks for endocarditis. [59799]

- **Adolescents**

  1 g PO as a single dose as part of combination therapy. Treat with the combination drug for at least 7 days for arthritis or arthritis-dermatitis syndrome, 10 to 14 days for meningitis, and at least 4 weeks for endocarditis. [59799]

- **Children weighing more than 45 kg**

  1 g PO as a single dose as part of combination therapy. Treat with the combination drug for at least 7 days for arthritis or arthritis-dermatitis syndrome, 10 to 14 days for meningitis, and at least 4 weeks for endocarditis. [59799] [63245]

for the treatment of gonococcal conjunctivitis†

Oral dosage (immediate-release)

- **Adults**

  1 g PO as a single dose plus ceftriaxone. Lavage the infected eye(s) with saline to remove accumulated secretions.[59799]

- **Adolescents**

  1 g PO as a single dose plus ceftriaxone. Lavage the infected eye(s) with saline to remove accumulated secretions.[59799]

- **Children weighing more than 45 kg**

  1 g PO as a single dose plus ceftriaxone. Lavage the infected eye(s) with saline to remove accumulated secretions.[59799] [63245]

For the treatment of chancroid

Oral dosage (immediate-release)

- **Adults**

  1 g PO as a single dose. Data are limited in HIV-infected patients.[28855] [59799]

- **Adolescents†**

1 g PO as a single dose. Data are limited in HIV-infected patients.[59799]

- **Infants† and Children†**

  20 mg/kg/dose (Max: 1 g/dose) PO as a single dose. Data are limited in HIV-infected patients.[59799] [63245]

For the treatment of primary†, secondary†, or early latent syphilis† in nonpregnant, penicillin-allergic patients

for the treatment of primary† or secondary syphilis† in nonpregnant, penicillin-allergic patients

Oral dosage (immediate-release)

- **Adults**

  2 g PO as a single dose as an alternative when penicillin and doxycycline are not feasible options. Do not use azithromycin in pregnant females or in males who have sex with males (MSM). Use in HIV-infected patients is controversial and not well-studied.[34362] [59799]

- **Adolescents**

  2 g PO as a single dose as an alternative when penicillin and doxycycline are not feasible options. Do not use azithromycin in pregnant females or in males who have sex with males (MSM). Use in HIV-infected patients is controversial and not well-studied.[34362] [59799]

for the treatment of early latent syphilis† in nonpregnant, penicillin-allergic HIV-infected patients

Oral dosage (immediate-release)

- **Adults**

  2 g PO as a single dose as an alternative when penicillin and doxycycline are not feasible options. Do not use azithromycin in pregnant females or in males who have sex with males (MSM). Use in HIV-infected patients is controversial and not well-studied.[34362] [59799]

- **Adolescents**

  2 g PO as a single dose as an alternative when penicillin and doxycycline are not feasible options. Do not use azithromycin in pregnant females or in males who have sex with males (MSM). Use in HIV-infected patients is controversial and not well-studied.[34362] [59799]

For the treatment of ophthalmia neonatorum†

Oral dosage (immediate-release)

- **Neonates**

  20 mg/kg/dose PO once daily for 3 days as an alternative.[59799]

For the treatment of non-gonococcal urethiritis (NGU) and chlamydia infection, including infant pneumonia†

NOTE: For ophthalmia neonatorum caused by *C. trachomatis*, see ophthalmia neonatorum indication.

for the treatment of non-gonococcal urethritis (NGU) and other urogenital infections (e.g., cervicitis, urethritis, proctitis)

Oral dosage (immediate-release)

- **Adults**

  1 g PO as a single dose.[28855] [43975] [59799] For recurrent or persistent urethritis, add metronidazole or tinidazole. For recurrent or persistent non-gonococcal urethritis in men initially treated with doxycycline, azithromycin 1 g PO as a single dose for treatment of *M. genitalium*.[59799]

- **Adolescents**†

  1 g PO as a single dose.[28855] [43975] [59799] For recurrent or persistent urethritis, add metronidazole or tinidazole. For recurrent or persistent non-gonococcal urethritis in men initially treated with doxycycline, azithromycin 1 g PO as a single dose for treatment of *M. genitalium*.[59799]

- **Children 8 to 12 years**†

  1 g PO as a single dose.[59799]

- **Children 1 to 7 years weighing 45 kg or more**†

  1 g PO as a single dose.[59799]

for the treatment of pneumonia caused by *Chlamydia trachomatis* in neonates and infants†

Oral dosage (immediate-release)

- **Infants**

  20 mg/kg/dose PO once daily for 3 days as an alternative.[59799]

- **Neonates**

  20 mg/kg/dose PO once daily for 3 days as an alternative.[59799]

For chlamydial infection prophylaxis† and gonorrhea prophylaxis† in victims of sexual assault

Oral dosage (immediate-release)

- **Adults**

  1 g PO as a single dose in combination with ceftriaxone plus either metronidazole or tinidazole (for trichomoniasis and bacterial vaginosis prophylaxis).[59799]

- **Adolescents**

  1 g PO as a single dose in combination with ceftriaxone plus either metronidazole or tinidazole (for trichomoniasis and bacterial vaginosis prophylaxis).[59799]

For the treatment of lymphogranuloma venereum†

for the primary treatment of lymphogranuloma venereum†

Oral dosage (immediate-release)

- **Adults**

  1 g PO once weekly for 3 weeks as an alternative.[59799]

- **Adolescents**

  1 g PO once weekly for 3 weeks as an alternative.[59799]

for the presumptive treatment of chlamydia in the sex partner(s) of a patient with lymphogranuloma venereum†

Oral dosage (immediate-release)

- **Adults**

  1 g PO as a single dose.[59799]

- **Adolescents**

  1 g PO as a single dose.[59799]

For the treatment of granuloma inguinale† (Donovanosis)

Oral dosage (immediate-release)

- **Adults**

  1 g PO once weekly or 500 mg PO once daily for at least 3 weeks and until all lesions have completely healed. Consider adding a second antibiotic if lesions do not respond within the first few days of therapy.[59799]

- **Adolescents**

  1 g PO once weekly or 500 mg PO once daily for at least 3 weeks and until all lesions have completely healed. Consider adding a second antibiotic if lesions do not respond within the first few days of therapy.[59799] [63245]

- **Children weighing 45 kg or more**

  1 g PO once weekly or 500 mg PO once daily for at least 3 weeks and until all lesions have completely healed. Consider adding a second antibiotic if lesions do not respond within the first few days of therapy.[59799] [63245]

For the treatment of Mycobacterium avium complex infection (MAC) in HIV-infected patients

Oral dosage (immediate-release)

- **Adults**

  500 to 600 mg PO once daily as part of combination therapy as an alternative.[34362] [43975] Duration of treatment depends on clinical response but should continue for at least 12 months.[34362]

- **Adolescents†**

  500 to 600 mg PO once daily as part of combination therapy as an alternative. Duration of treatment depends on clinical response but should continue for at least 12 months.[34362]

- **Infants† and Children†**

  10 to 12 mg/kg/dose (Max: 500 mg/dose) PO once daily as part of combination therapy as an alternative. Duration of treatment depends on clinical response but should continue for at least 12 months.[34361]

For Mycobacterium avium complex (MAC) prophylaxis in HIV-infected patients

for primary Mycobacterium avium complex (MAC) prophylaxis in HIV-infected patients

Oral dosage (immediate-release)

- **Adults**

  1,200 mg PO once weekly or 600 mg PO twice weekly as preferred therapy.[34362] [43975] Discontinue primary prophylaxis upon initiation of effective antiretroviral therapy (ART). Restart primary prophylaxis if the CD4 count decreases to less than 50 cells/mm^3 and not on fully suppressive ART.[34362]

- **Adolescents†**

  1,200 mg PO once weekly or 600 mg PO twice weekly as preferred therapy. Primary prophylaxis is only recommended for patients not on fully suppressive antiretroviral therapy (ART) with CD4 counts less than 50 cells/mm^3 after ruling out disseminated MAC. Discontinue primary prophylaxis upon initiation of effective ART. Restart primary prophylaxis if the CD4 count decreases to less than 50 cells/mm^3 and not on fully suppressive ART.[34362]

- **Children 6 to 12 years†**

  20 mg/kg/dose (Max: 1,200 mg/dose) PO once weekly as preferred therapy, or alternatively, 5 mg/kg/dose (Max: 250 mg/dose) PO once daily. Primary prophylaxis is recommended in children 6 years and older with a CD4 count less than 50 cells/mm^3. Primary prophylaxis may be discontinued after 6 months or more of antiretroviral therapy (ART) and a CD4 count more than 100 cells/mm^3 for more than 3 consecutive months. Restart primary prophylaxis if the CD4 count decreases to less than 100 cells/mm^3.[34361]

- **Children 2 to 5 years†**

  20 mg/kg/dose PO once weekly as preferred therapy, or alternatively, 5 mg/kg/dose PO once daily. Primary prophylaxis is recommended in children 2 to 5 years with a CD4 count less than 75 cells/mm^3. Primary prophylaxis may be discontinued after 6 months or more of antiretroviral therapy (ART) and a CD4 count more than 200 cells/mm^3 for more than 3 consecutive months. Restart primary prophylaxis if the CD4 count decreases to less than 200 cells/mm^3.[34361]

- **Children 1 year†**

  20 mg/kg/dose PO once weekly as preferred therapy, or alternatively, 5 mg/kg/dose PO once daily. Primary prophylaxis is recommended in children 1 to 2 years with a CD4 count less than 500 cells/mm^3. Do not discontinue primary prophylaxis for children younger than 2 years.[34361]

- **Infants†**

  20 mg/kg/dose PO once weekly as preferred therapy, or alternatively, 5 mg/kg/dose PO once daily. Primary prophylaxis is recommended in infants with a CD4 count less than 750 cells/mm^3. Do not discontinue primary prophylaxis for children younger than 2 years.[34361]

for secondary Mycobacterium avium complex (MAC) prophylaxis† (i.e., long-term suppressive therapy) in HIV-infected patients

Oral dosage (immediate-release)

- **Adults**

  500 to 600 mg PO once daily as part of combination therapy and preferred therapy. Consider discontinuing secondary prophylaxis in patients who have completed 12 months or more of MAC treatment, have no signs or symptoms of MAC disease, and have a CD4 count more than 100 cells/mm^3 for more than 6 months in response to antiretroviral therapy (ART). Restart secondary prophylaxis if the CD4 count decreases to less than 100 cells/mm^3.[34362]

- **Adolescents**

  500 to 600 mg PO once daily as part of combination therapy and preferred therapy. Consider discontinuing secondary prophylaxis in patients who have completed 12 months or more of MAC treatment, have no signs or symptoms of MAC disease, and have a CD4 count more than 100 cells/mm^3 for more than 6 months in response to antiretroviral therapy (ART). Restart secondary prophylaxis if the CD4 count decreases to less than 100 cells/mm^3.[34362]

- **Children 6 to 12 years**

  5 mg/kg/dose (Max: 250 mg/dose) PO once daily as part of combination therapy as an alternative. Consider discontinuing secondary prophylaxis in patients who have completed 6 months or more of antiretroviral therapy (ART), completed 12 months or more of MAC treatment, have no signs or symptoms of MAC disease, and have a CD4 count more than 100 cells/mm^3 for 6 consecutive months or more. Restart secondary prophylaxis if the CD4 count decreases to less than 100 cells/mm^3.[34361]

- **Children 2 to 5 years**

  5 mg/kg/dose PO once daily as part of combination therapy as an alternative. Consider discontinuing secondary prophylaxis in children who have completed 6 months or more of antiretroviral therapy (ART), completed 12 months or more of MAC treatment, have no signs or symptoms of MAC disease, and have a CD4 count more than 200 cells/mm^3 for 6 consecutive months or more. Restart secondary prophylaxis if the CD4 count decreases to less than 200 cells/mm^3.[34361]

- **Infants and Children 1 year**

  5 mg/kg/dose PO once daily as part of combination therapy as an alternative. Do not discontinue secondary prophylaxis for children younger than 2 years.[34361]

For the treatment of bartonellosis† in HIV-infected patients

Oral dosage (immediate-release)

- **Adults**

  500 mg PO once daily for at least 3 months as an alternative for *Bartonella* angiomatosis, peliosis hepatis, bacteremia, and osteomyelitis.[34362]

- **Adolescents**

  500 mg PO once daily for at least 3 months as an alternative for *Bartonella* angiomatosis, peliosis hepatis, bacteremia, and osteomyelitis.[34362]

For secondary bartonellosis prophylaxis† (i.e., long-term suppressive therapy) in HIV-infected patients

Oral dosage (immediate-release)

- **Adults**

  500 mg PO once daily. Discontinuation may be considered after 3 to 4 months of treatment and CD4 count more than 200 cells/mm^3 for at least 6 months. Some experts suggest that *Bartonella* titers also decrease by 4-fold before discontinuing of suppressive therapy.[34362]

- **Adolescents**

  500 mg PO once daily. Discontinuation may be considered after 3 to 4 months of treatment and CD4 count more than 200 cells/mm^3 for at least 6 months. Some experts suggest that *Bartonella* titers also decrease by 4-fold before discontinuing of suppressive therapy.[34362]

For the treatment of non-invasive shigellosis† in immunocompromised patients

Oral dosage (immediate-release)

- **Adults**

  500 mg PO once daily for 5 days as an alternative. Recurrent infection may require treating for up to 6 weeks. Azithromycin is not recommended for *Shigella* bacteremia. Most *Shigella* infections are self-limiting and do not require treatment.[34362] [65199] [65200]

- **Adolescents**

  500 mg PO once daily for 5 days as an alternative. Recurrent infection may require treating for up to 6 weeks. Azithromycin is not recommended for *Shigella* bacteremia. Most *Shigella* infections are self-limiting and do not require treatment.[34362] [65199] [65200]

- **Infants and Children**

  12 mg/kg/dose (Max: 500 mg/dose) PO once daily for 1 day, followed by 6 mg/kg/dose (Max: 250 mg/dose) PO once daily for 4 days has been used; however, data are limited.[54617] Most *Shigella* infections are self-limiting and do not require treatment.[65199] [65200]

For the treatment of mild-to-moderate campylobacteriosis†

Oral dosage (immediate-release)

- **Adults**

  500 mg PO once daily for 3 days as preferred therapy. Many acute cases do not need treatment.[65199] [65203]

- **HIV-infected Adults**

  500 mg PO once daily for 5 days as preferred therapy. Azithromycin is not recommended for *Campylobacter* bacteremia.[34362]

- **Adolescents**

  10 mg/kg/dose (Max: 500 mg/dose) PO once daily for 3 days.[63245] Many acute cases do not need treatment. [65203]

- **HIV-infected Adolescents**

  500 mg PO once daily for 5 days as preferred therapy. Azithromycin is not recommended for *Campylobacter* bacteremia.[34362]

- **Children**

  10 mg/kg/dose (Max: 500 mg/dose) PO once daily for 3 days.[63245] Many acute cases do not need treatment. [65203]

For the treatment of cholera†

Oral dosage (immediate-release)

- **Adults**

  1 g PO as a single dose as an alternative. Azithromycin may be considered as preferred therapy in pregnant women.[65199] [65206] [65207] [65208]

- **Children and Adolescents**

  20 mg/kg/dose (Max: 1 g/dose) PO as a single dose as preferred therapy.[65206] [65207] [65208]

For the treatment of moderate or severe traveler's diarrhea†

Oral dosage (immediate-release)

- **Adults**

  1,000 mg PO as a single dose or in 2 divided doses for 1 day or 500 mg PO once daily for 3 days. If symptoms are not resolved after single dose, continue daily dosing for up to 3 days. Guidelines suggest azithromycin as first-line therapy for dysentery or acute watery diarrhea with greater than mild fever. Antibiotic treatment is not recommended for mild cases, may be considered for moderate cases, and should be used for severe cases. [62855] [62856] [62857]

- **Infants, Children, and Adolescents**

  10 mg/kg/dose (Max: 500 mg/dose) PO once daily for 3 days as first-line therapy. Antibiotic treatment is not recommended for mild cases, may be considered for moderate cases, and should be used for severe cases. [51743] [62857]

For the treatment of uncomplicated typhoid fever†

Oral dosage (immediate-release)

- **Adults**

  8 to 10 mg/kg/dose (Max: 500 mg/dose) PO once daily for 7 days or 1 g PO once daily for 5 days.[32521]

- **Infants, Children, and Adolescents**

  8 to 10 mg/kg/dose (Max: 500 mg/dose) PO once daily for 7 days.[32521] [63245]

For the treatment of early Lyme disease†

for the treatment of early Lyme disease† in adults

Oral dosage (immediate-release)

- **Adults**

  500 mg PO once daily for 7 to 10 days. Macrolides are recommended for patients who are intolerant of or unable to take amoxicillin, doxycycline, or cefuroxime.[40655]

for the treatment of early Lyme disease† in children and adolescents

Strength of Recommendation: Equivocal/Weak For

Level of Evidence: Very Low, Detailed Level of Evidence

Oral dosage (immediate-release)

- **Children and Adolescents**

  10 mg/kg/day (Max: 500 mg/day) PO once daily for 7 to 10 days. Macrolides are recommended for patients who are intolerant of or unable to take amoxicillin, doxycycline, or cefuroxime.[40655]

For the treatment of babesiosis†

Oral dosage (immediate-release)

- **Adults**

  500 to 1,000 mg for 1 day, followed by 250 to 1,000 mg PO once daily in combination with atovaquone for at least 7 to 10 days.[65212]

- **Infants, Children, and Adolescents**

  10 mg/kg/dose (Max: 500 mg/dose) PO for 1 day, followed by 5 mg/kg/dose (Max: 250 mg/dose) PO once daily in combination with atovaquone for at least 7 to 10 days.[63245]

For the treatment of dental infection† or dentoalveolar infection†, including periodontitis†, acute dental abscess (apical)†, and dental abscess (periapical)†

for the treatment of chronic periodontitis† after scaling and root planing

Oral dosage (immediate-release)

- **Adults**

  500 mg PO once daily for 4 to 7 days.[31964]

for the treatment of acute dental abscess in combination with surgical incision and drainage in patients with beta-lactam allergy

Oral dosage (immediate-release)

- **Adults**

  1 g PO once daily for 1 day, followed by 500 mg PO once daily for 2 days.[31964]

For bacterial endocarditis prophylaxis†

Oral dosage (immediate-release)

- **Adults**

  500 mg PO as a single dose given 30 to 60 minutes before procedure as an alternative for patients allergic to penicillin. Prophylaxis is recommended for at-risk cardiac patients who are undergoing dental procedures that involve manipulation of gingival tissue, manipulation of the periapical region of teeth, or perforation of the oral mucosa. Cardiac patients that are considered to be at highest risk include those with prosthetic cardiac valves or prosthetic material used for cardiac valve repair, previous infective endocarditis, select types of congenital heart disease (CHD), and cardiac transplantation with valvulopathy.[34189] [61833]

- **Children and Adolescents**

15 mg/kg/dose (Max: 500 mg/dose) PO as a single dose given 30 to 60 minutes before procedure as an alternative for patients allergic to penicillin. Prophylaxis is recommended for at-risk cardiac patients who are undergoing dental procedures that involve manipulation of gingival tissue, manipulation of the periapical region of teeth, or perforation of the oral mucosa. Cardiac patients that are considered to be at highest risk include those with prosthetic cardiac valves or prosthetic material used for cardiac valve repair, previous infective endocarditis, select types of congenital heart disease (CHD), and cardiac transplantation with valvulopathy. [34189] [61833]

For improving pulmonary function in cystic fibrosis† patients chronically colonized with *Pseudomonas aeruginosa*

Oral dosage (immediate-release)

- **Adults**

  500 mg PO 3 times weekly is a common regimen.[27654] [51769] However, optimal dosing is not well established and various regimens are used; some centers prefer daily dosing, and once weekly therapy has also been studied.[27655] [27656] [56856] Guidelines recommend azithromycin to improve lung function and decrease pulmonary exacerbations in CF patients 6 years and older who have sputum cultures persistently positive for *P. aeruginosa*.[51770]

- **Children and Adolescents 6 to 17 years weighing 40 kg or more**

  500 mg PO 3 times weekly is a common regimen.[27654] [51769] However, optimal dosing is not well established and various regimens are used; some centers prefer daily dosing, and once weekly therapy has also been studied.[27655] [27656] [56855] [56856] Guidelines recommend azithromycin to improve lung function and decrease pulmonary exacerbations in CF patients 6 years and older who have sputum cultures persistently positive for *P. aeruginosa*.[51770]

- **Children and Adolescents 6 to 17 years weighing less than 40 kg**

  250 mg PO 3 times weekly is a common regimen.[27654] [51769] However, optimal dosing is not well established and various regimens are used; some centers prefer daily dosing, and once weekly therapy has also been studied.[27655] [27656] [56855] [56856] Guidelines recommend azithromycin to improve lung function and decrease pulmonary exacerbations in CF patients 6 years and older who have sputum cultures persistently positive for *P. aeruginosa*.[51770]

For the treatment of pertussis (whooping cough)† or for postexposure pertussis prophylaxis†

Oral dosage (immediate-release)

- **Adults**

500 mg PO once daily for 1 day, followed by 250 mg PO once daily for 4 days. For postexposure prophylaxis, administer to close contacts within 3 weeks of exposure.[31752]

- **Infants, Children, and Adolescents 6 months to 17 years**

  10 mg/kg/dose (Max: 500 mg/dose) PO once daily for 1 day, followed by 5 mg/kg/dose (Max: 250 mg/dose) PO once daily for 4 days. For postexposure prophylaxis, administer to close contacts within 3 weeks of exposure.[31752] [63245]

- **Infants 1 to 5 months**

  10 mg/kg/dose PO once daily for 5 days. For postexposure prophylaxis, administer to close contacts within 3 weeks of exposure.[31752] [63245]

- **Neonates**

  10 mg/kg/dose PO once daily for 5 days. For postexposure prophylaxis, administer to close contacts within 3 weeks of exposure.[31752] [63245]

For asthma maintenance† add-on therapy in patients with uncontrolled or severe asthma

Oral dosage (immediate-release oral tablets or suspension)

- **Adults**

  250 to 500 mg PO 3 days per week has been recommended to reduce the incidence of asthma exacerbations in patients with severe asthma who are optimized on inhaled corticosteroids/long-acting beta agonist therapy but who continue to have exacerbations.[64807] [65259] [65260] [65261] Fewer asthma exacerbations and improved quality of life were reported in patients (n = 213) treated with azithromycin 500 mg PO 3 days per week for 48 weeks.[65259] The rate of severe exacerbations and lower respiratory tract infections were not reduced in patients (n = 55) with severe asthma treated with azithromycin 250 mg PO 3 days per week.[65261]

Therapeutic Drug Monitoring

The following recommendations are for baseline and continuous monitoring when using azithromycin with hydroxychloroquine or chloroquine:

- Obtain a pre-treatment QTc using a standard 12-lead ECG, telemetry, or mobile ECG device.
- Obtain baseline electrolytes, including calcium, magnesium, and potassium; correct abnormalities.
- Determine if the patient is currently on any QT-prolonging medications that can be discontinued.[65170]
- Document high-risk cardiovascular and comorbid conditions.[65170] Assess and adjust for hepatic and renal dysfunction.[65242]

Inpatient Use

- Place telemetry prior to initiation, if possible.
- Monitor and optimize serum electrolytes daily.[65242]
- If the baseline QTc is 500 msec or more and/or the patient has an inherent tendency to develop an exaggerated QTc response (i.e., change of 60 msec or more), correct contributing electrolyte abnormalities, review and discontinue other unnecessary QTc prolonging medications, and proceed with close QTc surveillance.[65170] Some experts recommend withholding treatment for patients with a baseline QTc of 500 msec or more (or more than 530 to 550 msec in patients with a QRS interval more than 120 msec) or in those with congenital long QT syndrome.[65242]
- If the baseline QTc is 460 to 499 msec (prepubertal), 470 to 499 msec (postpubertal males), or 480 to 499 msec (postpubertal females), correct contributing electrolyte abnormalities, review and discontinue other unnecessary QTc prolonging medications, and obtain an initial on-therapy QTc daily (or 48 and 96 hours after treatment initiation).[65170] [65242]
- If the baseline QTc is less than 460 msec (prepubertal), less than 470 msec (postpubertal males), or less than 480 msec (postpubertal females), correct electrolyte abnormalities and obtain an initial on-therapy QTc daily (or 48 and 96 hours after treatment initiation).[65170] [65242]
- Obtain an initial on-therapy QTc approximately 2 to 4 hours after the first dose and then daily (some recommend 48 and 96 hours after treatment initiation).[65170] [65242]
- Discontinue azithromycin and/or reduce the antimalarial dose if the subsequent QTc is prolonged or significantly increased above the specified parameters. If the QTc remains prolonged or significantly increased, reevaluate the risk/benefit of therapy, consider consultation with an electrophysiologist, and consider hydroxychloroquine/chloroquine discontinuation.[65242]

Outpatient Use

- Do not initiate outpatient therapy in the setting of acute renal or hepatic failure.[65242]
- If the baseline QTc is 500 msec or more and/or the patient has an inherent tendency to develop an exaggerated QTc response (i.e., change of 60 msec or more), correct contributing electrolyte abnormalities, review and discontinue other unnecessary QTc prolonging medications, and proceed with close QTc surveillance.[65170] Some experts recommend withholding treatment in patients with a baseline QTc of 480 msec or more (or more than 510 to 530 msec in patients with a QRS interval more than 120 msec), congenital long QT syndrome, or a Tisdale risk score of 11 or more.[65242]
- Consider no further ECG/telemetry assessment for patients with a Tisdale risk score of 6 or less, if resource or quarantine constraints are prohibitive of monitoring. Otherwise, repeat the ECT 2 to 3 hours after dosing on day 3 of therapy. If the QTc exceeds 500 msec (or 530 to 550 msec if QRS is more than 120 msec) or increases by more than 30 to 60 msec, consider discontinuing therapy.[65242]

Maximum Dosage Limits

- Adults

  500 mg/day PO is FDA-approved dosage; however, doses up to 1,200 mg/day PO are used off-label; 2 g PO when given as single dose; 500 mg/day IV infusion.

- Geriatric

  500 mg/day PO is FDA-approved dosage; however, doses up to 1,200 mg/day PO are used off-label; 2 g PO when given as single dose; 500 mg/day IV infusion.

- Adolescents

  16 to 17 years: 500 mg/day PO is FDA-approved dosage; however, doses up to 1,200 mg/day PO are used off-label; 2 g PO when given as single dose; 500 mg/day IV infusion.

13 to 15 years: For the immediate-release oral suspension or tablets, 12 mg/kg/day PO (Max: 500 mg/dose) and single doses up to 30 mg/kg PO (Max: 1.5 g/dose) are the maximum FDA-approved dosages; however, doses up to 20 mg/kg/day PO (Max: 1,000 mg/day) or 1,200 mg/day are used off-label. For extended-release oral suspension, 60 mg/kg single dose PO (Max: 2 g/dose). Safety and efficacy have not been established for IV; however, doses up to 10 mg/kg/day (Max: 500 mg/dose) have been used off-label.

- Children

2 to 12 years: For the immediate-release oral suspension or tablets, 12 mg/kg/day PO (Max: 500 mg/dose) and single doses up to 30 mg/kg PO (Max: 1.5 g/dose) are the maximum FDA-approved dosages; however, doses up to 20 mg/kg/day PO (Max: 1,000 mg/day) are used off-label. For extended-release oral suspension, 60 mg/kg single dose PO (Max: 2 g/dose). Safety and efficacy have not been established for IV; however, doses up to 10 mg/kg/day (Max: 500 mg/dose) have been used off-label.

1 year: For the immediate-release oral suspension or tablets, 10 mg/kg/day PO and single doses up to 30 mg/kg PO are the maximum FDA-approved dosages; however, doses up to 20 mg/kg/day PO are used off-label. For extended-release oral suspension, 60 mg/kg single dose PO. Safety and efficacy have not been established for IV; however, doses up to 10 mg/kg/day have been used off-label.

- Infants

6 to 11 months: For the immediate-release oral suspension or tablets, 10 mg/kg/day PO and single doses up to 30 mg/kg PO are the maximum FDA-approved dosages; however, doses up to 20 mg/kg/day PO are used off-label. For extended-release oral suspension, 60 mg/kg single dose PO. Safety and efficacy have not been established for IV; however, doses up to 10 mg/kg/day have been used off-label.

3 to 5 months: Safety and efficacy have not been established; however, doses up to 20 mg/kg/day PO or 10 mg/kg/day IV have been used off-label.

1 to 2 months: Safety and efficacy have not been established; however, doses up to 20 mg/kg/day PO have been used off-label.

- Neonates

Safety and efficacy have not been established; however, doses up to 20 mg/kg/day PO have been used off-label.

Patients with Hepatic Impairment Dosing

Dosage adjustment recommendations are not available; azithromycin has not been studied in patients with impaired hepatic function.[28855]

Patients with Renal Impairment Dosing

CrCl more than 80 mL/min: No dosage adjustment is needed.

CrCl 10 to 80 mL/min: No dosage adjustment is recommended.

CrCl less than 10 mL/min: No dosage adjustment is recommended; however, the manufacturer recommends caution in patients with severe renal impairment since mean AUC is increased roughly 35%.[28855][43974]

† Off-label indication

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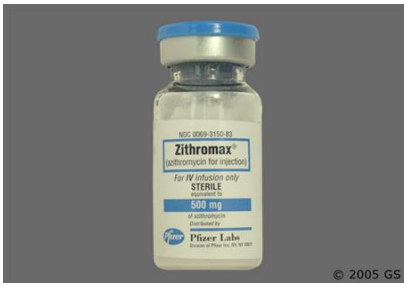
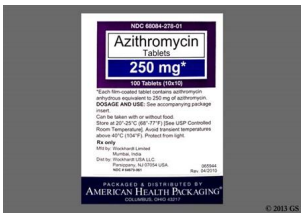
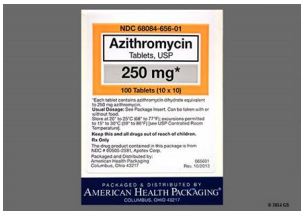
How Supplied

Azithromycin Lyophilisate for solution for injection	
Azithromycin 2.5g Powder for Injection (00703-9089) (Teva Pharmaceuticals USA)	
Azithromycin 500mg Powder for Injection (60505-6076) (Apotex Corp)	
Azithromycin 500mg Powder for Injection (70860-0100) (Athenex Pharmaceutical Division LLC)	
Azithromycin 500mg Powder for Injection (55150-0174) (AuroMedics Pharma LLC)	
Azithromycin 500mg Powder for Injection (10019-0648) (Baxter Anesthesia/Critical Care) (off market)	
Azithromycin 500mg Powder for Injection (63323-0398) (Fresenius Kabi USA, LLC)	
Azithromycin 500mg Powder for Injection (10019-0648) (Hikma Pharmaceuticals USA inc.) (off market)	
Azithromycin 500mg Powder for Injection (00409-0144) (Hospira Worldwide, Inc., a Pfizer Company)	
Azithromycin 500mg Powder for Injection (25021-0112) (Sagent Pharmaceuticals) (off market)	
Azithromycin 500mg Powder for Injection (70436-0019) (Slate Run Pharmaceuticals, LLC)	
Azithromycin 500mg Powder for Injection (62756-0512) (Sun Pharmaceutical Industries, Inc.)	
Azithromycin 500mg Powder for Injection (00703-9085) (Teva Pharmaceuticals USA) (off market)	
Azithromycin 500mg Powder for Injection (50111-0794) (Teva Pharmacueticals USA)	
Azithromycin 500mg Powder for Injection (NOVAPLUS) (70860-0125) (Athenex Pharmaceutical Division LLC)	
Azithromycin 500mg Powder for Injection (NOVAPLUS) (63323-0398) (Fresenius Kabi USA, LLC)	
Azithromycin 500mg Powder for Injection (PREMIER ProRx) (63323-0398) (Fresenius Kabi USA, LLC)	
Zithromax 500mg Powder for Injection (00069-3150) (Pfizer Inc.)	
Zithromax 500mg Powder for Injection (00069-3150) (Pfizer Inc.) (off market)	
Zithromax 500mg Powder for Injection (Amerinet) (00069-0400) (Pfizer Injectables)	

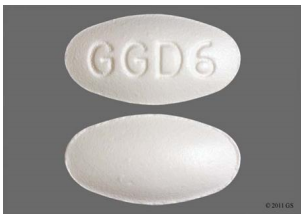
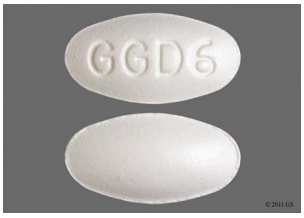
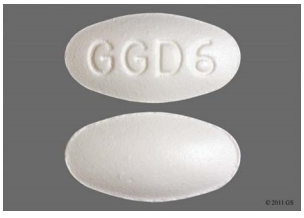
Azithromycin Ophthalmic drops, solution	
Azasite 1% Ophthalmic Solution (17478-0307) (Akorn Inc)	

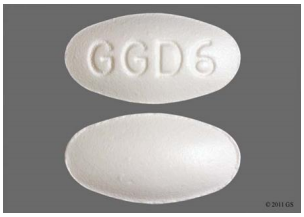
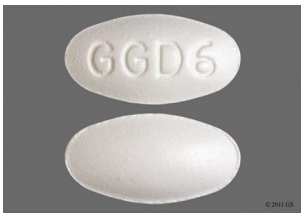
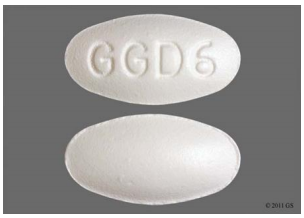
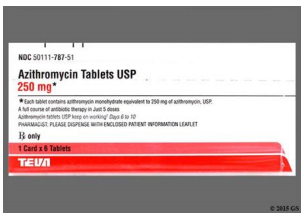
Azithromycin Ophthalmic drops, solution	
Azasite 1% Ophthalmic Solution (31357-0040) (Inspire Pharmaceuticals Inc.) (off market)	
Azasite 1% Ophthalmic Solution (31357-0040) (Inspire Pharmaceuticals Inc.) (off market)	
Azasite 1% Ophthalmic Solution (31357-0040) (Oak Pharmaceuticals wholly-owned subsidiary Akorn Inc.) (off market)	

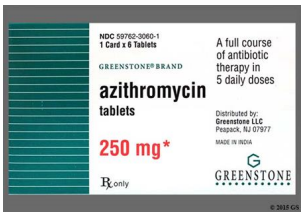
Azithromycin Oral capsule
Zithromax 250mg Capsule (00069-3050) (Pfizer Inc.) (off market)
Zithromax Z-PAK 250mg Capsule (00069-6050) (Pfizer Inc.) (off market)

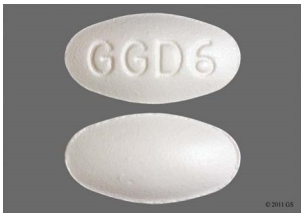
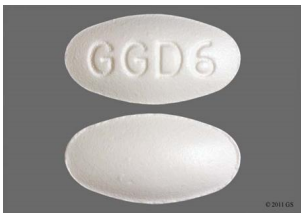
Azithromycin Oral tablet	
Azithromycin 250mg Tablet (62332-0251) (Alembic Pharmaceuticals, Inc.)	
Azithromycin 250mg Tablet (68084-0278) (American Health Packaging) (off market)	
Azithromycin 250mg Tablet (68084-0443) (American Health Packaging)	
Azithromycin 250mg Tablet (68084-0656) (American Health Packaging) (off market)	 
Azithromycin 250mg Tablet (68084-0906) (American Health Packaging) (off market)	
Azithromycin 250mg Tablet (68084-0278) (American Health Packaging)	

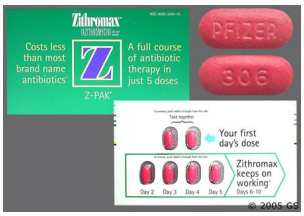
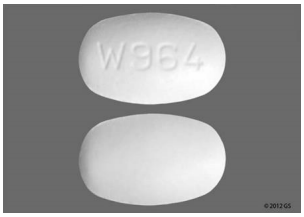
Azithromycin Oral tablet	
Azithromycin 250mg Tablet (60687-0282) (American Health Packaging) (off market)	
Azithromycin 250mg Tablet (60687-0282) (American Health Packaging)	
Azithromycin 250mg Tablet (60505-2581) (Apotex Corp)	
Azithromycin 250mg Tablet (65862-0641) (Aurobindo Pharma USA Inc.)	
Azithromycin 250mg Tablet (50268-0098) (AvPAK; a Division of AvKARE Inc) (off market)	
Azithromycin 250mg Tablet (50268-0100) (AvPAK; a Division of AvKARE Inc) (off market)	
Azithromycin 250mg Tablet (50268-0103) (AvPAK; a Division of AvKARE Inc) (off market)	
Azithromycin 250mg Tablet (50268-0098) (AvPAK; a Division of AvKARE Inc)	
Azithromycin 250mg Tablet (69452-0171) (Bionpharma Inc)	
Azithromycin 250mg Tablet (59762-3060) (Greenstone Ltd)	
Azithromycin 250mg Tablet (59762-2198) (Greenstone Ltd)	
Azithromycin 250mg Tablet (00527-2370) (Lannett Company, Inc.)	
Azithromycin 250mg Tablet (68180-0160) (Lupin Pharmaceuticals, Inc.)	
Azithromycin 250mg Tablet (00904-6010) (Major Pharmaceuticals Inc, a Harvard Drug Group Company) (off market)	
Azithromycin 250mg Tablet (00904-6010) (Major Pharmaceuticals Inc, a Harvard Drug Group Company) (off market)	

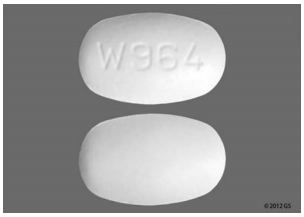
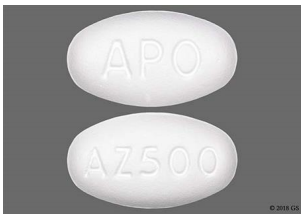
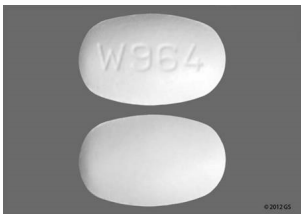
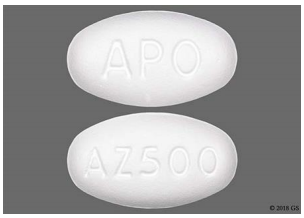
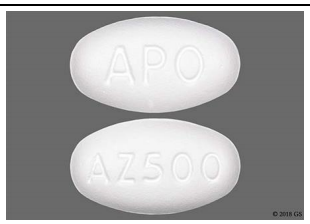
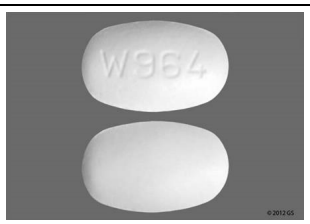
Azithromycin Oral tablet	
Azithromycin 250mg Tablet (00904-6405) (Major Pharmaceuticals Inc, a Harvard Drug Group Company) (off market)	
Azithromycin 250mg Tablet (00904-6708) (Major Pharmaceuticals Inc, a Harvard Drug Group Company)	
Azithromycin 250mg Tablet (63739-0575) (McKesson Packaging) (off market)	
Azithromycin 250mg Tablet (51079-0591) (Mylan Institutional LLC)	
Azithromycin 250mg Tablet (51079-0040) (Mylan Institutional LLC)	
Azithromycin 250mg Tablet (16571-0695) (Pack Pharmaceuticals, LLC, a subsidiary of Rising Pharmaceuticals)	
Azithromycin 250mg Tablet (43063-0090) (PD-Rx Pharmaceuticals, Inc.) (off market)	
Azithromycin 250mg Tablet (55289-0964) (PD-Rx Pharmaceuticals, Inc.)	
Azithromycin 250mg Tablet (43063-0090) (PD-Rx Pharmaceuticals, Inc.) (off market)	
Azithromycin 250mg Tablet (43063-0524) (PD-Rx Pharmaceuticals, Inc.) (off market)	 
Azithromycin 250mg Tablet (43063-0572) (PD-Rx Pharmaceuticals, Inc.) (off market)	
Azithromycin 250mg Tablet (43063-0728) (PD-Rx Pharmaceuticals, Inc.)	
Azithromycin 250mg Tablet (33358-0040) (RxChange Co.)	

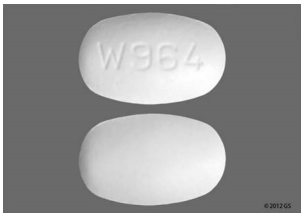
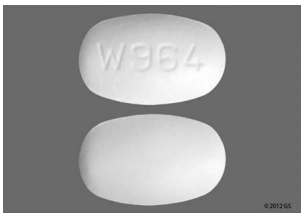
Azithromycin Oral tablet	
Azithromycin 250mg Tablet (00781-1496) (Sandoz Inc. a Novartis Company) (off market)	
Azithromycin 250mg Tablet (00781-5776) (Sandoz Inc. a Novartis Company)	
Azithromycin 250mg Tablet (00781-8089) (Sandoz Inc. a Novartis Company)	
Azithromycin 250mg Tablet (51224-0022) (TAGI Pharma, Inc.)	
Azithromycin 250mg Tablet (00093-7146) (Teva Pharmaceuticals USA) (off market)	
Azithromycin 250mg Tablet (50111-0787) (Teva Pharmaceuticals USA) (off market)	
Azithromycin 250mg Tablet (50111-0787) (Teva Pharmaceuticals USA) (off market)	 
Azithromycin 250mg Tablet (50111-0787) (Teva Pharmaceuticals USA)	
Azithromycin 250mg Tablet (64679-0961) (Wockhardt USA, LLC) (off market)	

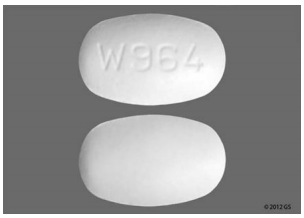
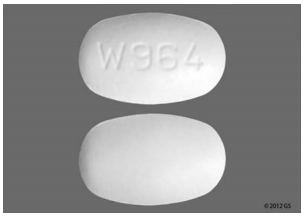
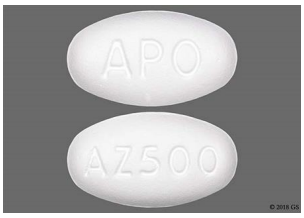
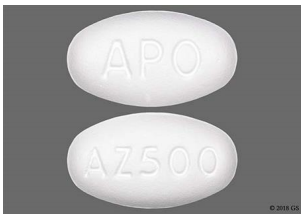
Azithromycin Oral tablet	
Azithromycin 250mg Tablet (64679-0961) (Wockhardt USA, LLC)	
Azithromycin 250mg Tablet (6ct Blister Card) (60505-2581) (Apotex Corp) (off market)	
Azithromycin 250mg Tablet (6ct Blister Card) (60505-2581) (Apotex Corp)	
Azithromycin 250mg Tablet (6ct Blister Card) (65862-0641) (Aurobindo Pharma USA Inc.)	
Azithromycin 250mg Tablet (6ct Blister Card) (70882-0107) (Cambridge Therapeutics Technologies, LLC)	
Azithromycin 250mg Tablet (6ct Blister Card) (59762-3060) (Greenstone Ltd)	 
Azithromycin 250mg Tablet (6ct Blister Card) (59762-2198) (Greenstone Ltd)	
Azithromycin 250mg Tablet (6ct Blister Card) (68180-0160) (Lupin Pharmaceuticals, Inc.)	  

Azithromycin Oral tablet	
Azithromycin 250mg Tablet (6ct Blister Card) (00378-1533) (Mylan Pharmaceuticals Inc.)	
Azithromycin 250mg Tablet (6ct Blister Card) (16571-0695) (Pack Pharmaceuticals, LLC, a subsidiary of Rising Pharmaceuticals)	
Azithromycin 250mg Tablet (6ct Blister Card) (00781-1496) (Sandoz Inc. a Novartis Company) (off market)	
Azithromycin 250mg Tablet (6ct Blister Card) (00781-5776) (Sandoz Inc. a Novartis Company) (off market)	
Azithromycin 250mg Tablet (6ct Blister Card) (00781-8089) (Sandoz Inc. a Novartis Company)	
Azithromycin 250mg Tablet (6ct Blister Card) (51224-0022) (TAGI Pharma, Inc.)	
Azithromycin 250mg Tablet (6ct Blister Card) (00093-7146) (Teva Pharmaceuticals USA)	
Azithromycin 250mg Tablet (6ct Blister Card) (64679-0961) (Wockhardt USA, LLC) (off market)	
Azithromycin 250mg Tablet (6ct Blister Card) (64679-0961) (Wockhardt USA, LLC)	
Zithromax 250mg Tablet (66267-0928) (NuCare Pharmaceuticals Inc) (off market)	
Zithromax 250mg Tablet (55289-0310) (PD-Rx Pharmaceuticals, Inc.)	

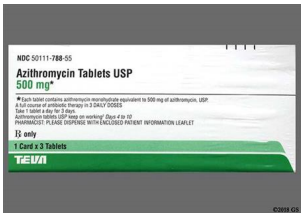
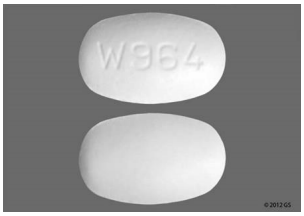
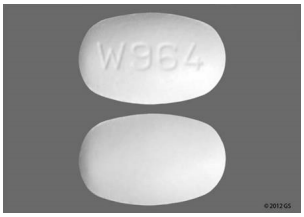
Azithromycin Oral tablet	
Zithromax 250mg Tablet (58864-0791) (PD-Rx Pharmaceuticals, Inc.) (off market)	
Zithromax 250mg Tablet (58864-0655) (PD-Rx Pharmaceuticals, Inc.) (off market)	
Zithromax 250mg Tablet (00069-3060) (Pfizer Inc.)	
Zithromax 250mg Tablet (00069-4061) (Pfizer Inc.)	
Zithromax 250mg Tablet (00069-4061) (Pfizer Inc.)	
Zithromax Z-PAK 250mg Tablet (00069-3060) (Pfizer Inc.)	 
Azithromycin 500mg Tablet (62332-0252) (Alembic Pharmaceuticals, Inc.)	
Azithromycin 500mg Tablet (68084-0279) (American Health Packaging) (off market)	
Azithromycin 500mg Tablet (68084-0913) (American Health Packaging) (off market)	

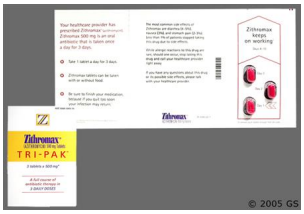
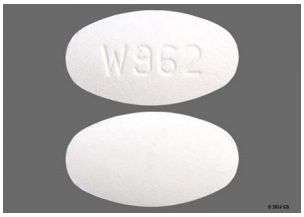
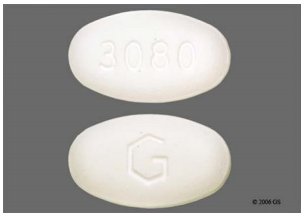
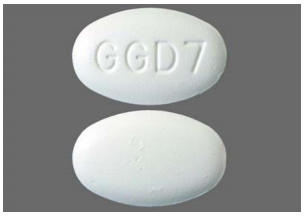
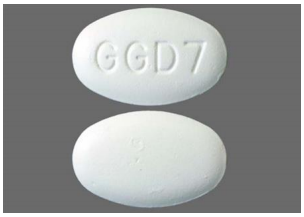
Azithromycin Oral tablet	
Azithromycin 500mg Tablet (68084-0279) (American Health Packaging)	
Azithromycin 500mg Tablet (60687-0271) (American Health Packaging)	
Azithromycin 500mg Tablet (60505-2582) (Apotex Corp)	
Azithromycin 500mg Tablet (65862-0642) (Aurobindo Pharma USA Inc.)	
Azithromycin 500mg Tablet (50268-0099) (AvPAK; a Division of AvKARE Inc) (off market)	
Azithromycin 500mg Tablet (50268-0101) (AvPAK; a Division of AvKARE Inc) (off market)	
Azithromycin 500mg Tablet (50268-0104) (AvPAK; a Division of AvKARE Inc) (off market)	
Azithromycin 500mg Tablet (50268-0099) (AvPAK; a Division of AvKARE Inc)	
Azithromycin 500mg Tablet (69452-0172) (Bionpharma Inc)	
Azithromycin 500mg Tablet (70882-0108) (Cambridge Therapeutics Technologies, LLC) (off market)	

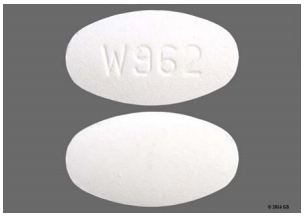
Azithromycin Oral tablet	
Azithromycin 500mg Tablet (59762-3070) (Greenstone Ltd)	
Azithromycin 500mg Tablet (00527-2395) (Lannett Company, Inc.)	
Azithromycin 500mg Tablet (68180-0161) (Lupin Pharmaceuticals, Inc.)	
Azithromycin 500mg Tablet (00904-6011) (Major Pharmaceuticals Inc, a Harvard Drug Group Company) (off market)	
Azithromycin 500mg Tablet (16571-0696) (Pack Pharmaceuticals, LLC, a subsidiary of Rising Pharmaceuticals)	
Azithromycin 500mg Tablet (55289-0274) (PD-Rx Pharmaceuticals, Inc.) (off market)	
Azithromycin 500mg Tablet (55289-0274) (PD-Rx Pharmaceuticals, Inc.) (off market)	
Azithromycin 500mg Tablet (43063-0506) (PD-Rx Pharmaceuticals, Inc.)	
Azithromycin 500mg Tablet (43063-0540) (PD-Rx Pharmaceuticals, Inc.)	
Azithromycin 500mg Tablet (43063-0568) (PD-Rx Pharmaceuticals, Inc.) (off market)	
Azithromycin 500mg Tablet (43063-0713) (PD-Rx Pharmaceuticals, Inc.)	
Azithromycin 500mg Tablet (72789-0066) (PD-Rx Pharmaceuticals, Inc.)	
Azithromycin 500mg Tablet (72789-0063) (PD-Rx Pharmaceuticals, Inc.)	
Azithromycin 500mg Tablet (00781-1941) (Sandoz Inc. a Novartis Company) (off market)	

Azithromycin Oral tablet	
Azithromycin 500mg Tablet (00781-5789) (Sandoz Inc. a Novartis Company) (off market)	
Azithromycin 500mg Tablet (00781-8090) (Sandoz Inc. a Novartis Company)	
Azithromycin 500mg Tablet (51224-0122) (TAGI Pharma, Inc.)	
Azithromycin 500mg Tablet (00093-7169) (Teva Pharmaceuticals USA)	
Azithromycin 500mg Tablet (50111-0788) (Teva Pharmaceuticals USA)	
Azithromycin 500mg Tablet (50111-0788) (Teva Pharmacueticals USA) (off market)	
Azithromycin 500mg Tablet (64679-0964) (Wockhardt USA, LLC) (off market)	
Azithromycin 500mg Tablet (64679-0964) (Wockhardt USA, LLC)	
Azithromycin 500mg Tablet (3ct Blister Card) (60505-2582) (Apotex Corp) (off market)	
Azithromycin 500mg Tablet (3ct Blister Card) (60505-2582) (Apotex Corp)	

Azithromycin Oral tablet	
Azithromycin 500mg Tablet (3ct Blister Card) (65862-0642) (Aurobindo Pharma USA Inc.)	
Azithromycin 500mg Tablet (3ct Blister Card) (70882-0118) (Cambridge Therapeutics Technologies, LLC)	
Azithromycin 500mg Tablet (3ct Blister Card) (59762-3070) (Greenstone Ltd)	
Azithromycin 500mg Tablet (3ct Blister Card) (68180-0161) (Lupin Pharmaceuticals, Inc.)	  
Azithromycin 500mg Tablet (3ct Blister Card) (00378-1534) (Mylan Pharmaceuticals Inc.)	
Azithromycin 500mg Tablet (3ct Blister Card) (55289-0274) (PD-Rx Pharmaceuticals, Inc.) (off market)	
Azithromycin 500mg Tablet (3ct Blister Card) (00781-1941) (Sandoz Inc. a Novartis Company) (off market)	 

Azithromycin Oral tablet	
Azithromycin 500mg Tablet (3ct Blister Card) (00781-5789) (Sandoz Inc. a Novartis Company) (off market)	
Azithromycin 500mg Tablet (3ct Blister Card) (00781-8090) (Sandoz Inc. a Novartis Company)	
Azithromycin 500mg Tablet (3ct Blister Card) (51224-0122) (TAGI Pharma, Inc.)	
Azithromycin 500mg Tablet (3ct Blister Card) (00093-7169) (Teva Pharmaceuticals USA) (off market)	 
Azithromycin 500mg Tablet (3ct Blister Card) (50111-0788) (Teva Pharmaceuticals USA)	
Azithromycin 500mg Tablet (3ct Blister Card) (64679-0964) (Wockhardt USA, LLC) (off market)	
Azithromycin 500mg Tablet (3ct Blister Card) (64679-0964) (Wockhardt USA, LLC)	
Zithromax 500mg Tablet (00069-3070) (Pfizer Inc.)	

Azithromycin Oral tablet	
Zithromax Tri-Pak 500mg Tablet (00069-3070) (Pfizer Inc.)	 
Azithromycin 600mg Tablet (68084-0464) (American Health Packaging)	
Azithromycin 600mg Tablet (68084-0920) (American Health Packaging) (off market)	
Azithromycin 600mg Tablet (60687-0314) (American Health Packaging)	
Azithromycin 600mg Tablet (60505-2583) (Apotex Corp)	
Azithromycin 600mg Tablet (69452-0173) (Bionpharma Inc)	
Azithromycin 600mg Tablet (59762-3080) (Greenstone Ltd)	
Azithromycin 600mg Tablet (68180-0162) (Lupin Pharmaceuticals, Inc.)	
Azithromycin 600mg Tablet (00378-1535) (Mylan Pharmaceuticals Inc.)	
Azithromycin 600mg Tablet (00781-1497) (Sandoz Inc. a Novartis Company) (off market)	
Azithromycin 600mg Tablet (00781-5793) (Sandoz Inc. a Novartis Company)	
Azithromycin 600mg Tablet (51224-0222) (TAGI Pharma, Inc.)	
Azithromycin 600mg Tablet (00093-7147) (Teva Pharmaceuticals USA) (off market)	
Azithromycin 600mg Tablet (50111-0789) (Teva Pharmaceuticals USA)	
Azithromycin 600mg Tablet (50111-0789) (Teva Pharmacueticals USA) (off market)	

Azithromycin Oral tablet	
Azithromycin 600mg Tablet (64679-0962) (Wockhardt USA, LLC) (off market)	
Azithromycin 600mg Tablet (64679-0962) (Wockhardt USA, LLC)	
Zithromax 600mg Tablet (00069-3080) (Pfizer Inc.)	

Azithromycin Powder for oral suspension	
Azithromycin 1g Single-Dose Powder for Suspension (59762-3051) (Greenstone Ltd)	 
Zithromax 1g Single-Dose Powder for Suspension (00069-3051) (Pfizer Inc.)	
Azithromycin 100mg/5ml Powder for Suspension (59762-3110) (Greenstone Ltd)	
Azithromycin 100mg/5ml Powder for Suspension (00185-7203) (Sandoz Inc. a Novartis Company)	
Azithromycin 100mg/5ml Powder for Suspension (00093-7148) (Teva Pharmaceuticals USA) (off market)	
Azithromycin 100mg/5ml Powder for Suspension (00093-2027) (Teva Pharmaceuticals USA)	
Azithromycin 100mg/5ml Powder for Suspension (00093-7148) (Teva Pharmaceuticals USA) (off market)	

Azithromycin Powder for oral suspension	
Azithromycin 100mg/5ml Powder for Suspension (50111-0793) (Teva Pharmacueticals USA) (off market)	
Azithromycin 100mg/5mL Powder for Suspension (59651-0007) (Aurobindo Pharma Limited)	
Azithromycin 100mg/5mL Powder for Suspension (42806-0147) (Epic Pharma LLC)	
Azithromycin 100mg/5mL Powder for Suspension (43386-0470) (Gavis Pharmaceuticals, LLC, wholly owned subsidiary of Lupin)	
Azithromycin 100mg/5mL Powder for Suspension (70710-1457) (Zydus Pharmaceuticals (USA) Inc.)	
Zithromax 100mg/5mL Powder for Suspension (00069-3110) (Pfizer Inc.)	
Azithromycin 200mg/5ml Powder for Suspension (59762-3120) (Greenstone Ltd)	
Azithromycin 200mg/5ml Powder for Suspension (59762-3130) (Greenstone Ltd)	
Azithromycin 200mg/5ml Powder for Suspension (59762-3140) (Greenstone Ltd)	
Azithromycin 200mg/5ml Powder for Suspension (00185-7206) (Sandoz Inc. a Novartis Company)	
Azithromycin 200mg/5ml Powder for Suspension (00185-7209) (Sandoz Inc. a Novartis Company)	
Azithromycin 200mg/5ml Powder for Suspension (00185-7212) (Sandoz Inc. a Novartis Company)	
Azithromycin 200mg/5ml Powder for Suspension (00093-7149) (Teva Pharmaceuticals USA) (off market)	

Azithromycin Powder for oral suspension	
Azithromycin 200mg/5ml Powder for Suspension (00093-2026) (Teva Pharmaceuticals USA)	  
Azithromycin 200mg/5ml Powder for Suspension (00093-7149) (Teva Pharmaceuticals USA) (off market)	
Azithromycin 200mg/5ml Powder for Suspension (50111-0767) (Teva Pharmacueticals USA) (off market)	
Azithromycin 200mg/5ml Powder for Suspension (50111-0791) (Teva Pharmacueticals USA) (off market)	
Azithromycin 200mg/5ml Powder for Suspension (50111-0792) (Teva Pharmacueticals USA) (off market)	
Azithromycin 200mg/5mL Powder for Suspension (59651-0008) (Aurobindo Pharma Limited)	
Azithromycin 200mg/5mL Powder for Suspension (42806-0149) (Epic Pharma LLC)	
Azithromycin 200mg/5mL Powder for Suspension (42806-0150) (Epic Pharma LLC)	
Azithromycin 200mg/5mL Powder for Suspension (42806-0151) (Epic Pharma LLC)	
Azithromycin 200mg/5mL Powder for Suspension (43386-0471) (Gavis Pharmaceuticals, LLC, wholly owned subsidiary of Lupin)	
Azithromycin 200mg/5mL Powder for Suspension (70710-1458) (Zydus Pharmaceuticals (USA) Inc.)	

Azithromycin Powder for oral suspension	
Azithromycin 200mg/5mL Powder for Suspension (70710-1459) (Zydus Pharmaceuticals (USA) Inc.)	
Azithromycin 200mg/5mL Powder for Suspension (70710-1460) (Zydus Pharmaceuticals (USA) Inc.)	
Zithromax 200mg/5mL Powder for Suspension (00069-3130) (Pfizer Inc.)	
Zithromax 200mg/5mL Powder for Suspension (00069-3120) (Pfizer Inc.)	
Zithromax 200mg/5mL Powder for Suspension (00069-3140) (Pfizer Inc.)	

Azithromycin Powder for oral suspension, extended release	
Zmax 2g Extended-Release Powder for Suspension (00069-4170) (Pfizer Inc.) (off market)	
Zmax 2g Extended-Release Powder for Suspension (00069-4170) (Pfizer Inc.)	
Zmax Pediatric 2g Extended-Release Powder for Suspension (00069-4170) (Pfizer Inc.) (off market)	

Description/Classification

Description

Azithromycin is a semisynthetic antibiotic belonging to the macrolide subgroup of azalides and is similar in structure to erythromycin. Azithromycin offers the advantage that it can be dosed once daily and produces less GI intolerance than does erythromycin. Azithromycin has a wider spectrum of activity than erythromycin against *Mycobacterium avium* complex (MAC), *Haemophilus influenzae*, nontuberculous mycobacteria, and *Chlamydia trachomatis*. Another apparent advantage over erythromycin is that azithromycin reaches higher intracellular concentrations, thus increasing its efficacy and duration of action.[50470] These advantages are demonstrated in studies that show that single doses of azithromycin are effective for the treatment of acute otitis media and sexually transmitted diseases (STDs) due to chlamydia and gonorrhea.[23529][24204][51748] Azithromycin is better tolerated and offers shorter treatment durations compared with clarithromycin.[50470] Azithromycin is used for the treatment of a variety of respiratory infections, including otitis media, pharyngitis/tonsillitis, pertussis, community-acquired pneumonia, and sinusitis.[28855] [51747] However, macrolides are not recommended for empiric monotherapy of acute bacterial sinusitis due to high rates of *Streptococcus pneumoniae* resistance (approximately 30%).[49853] Azithromycin is also used for the treatment of STDs due to chlamydia and gonorrhea, and for the prophylaxis and treatment of *Mycobacterium avium* complex (MAC) disease.[34361][43632] An ophthalmic preparation is used for the treatment of bacterial conjunctivitis.[43976] Long-term azithromycin is used off-label to improve lung function and decrease pulmonary exacerbation in cystic fibrosis patients 6 years and older who have sputum cultures persistently positive for *P. aeruginosa*.[51770] Additionally, long-term azithromycin may be used to reduce the incidence of asthma exacerbations in adult patients with severe asthma who are optimized on inhaled corticosteroids/long-acting beta agonist therapy but who continue to have exacerbations. Prior to starting therapy, sputum should be checked for atypical mycobacteria, and comorbidities and drug interactions should be considered before using azithromycin in this manner.[64807][65259][65260][65261] While azithromycin has been studied in regimens for *H. pylori* eradication and some studies show efficacy, azithromycin-containing *H. pylori* eradication regimens have not been as effective as regimens containing clarithromycin in terms of eradication rates.[51749][51750] Macrolide cross-resistance is also an issue.[51751]

Updates for coronavirus disease 2019 (COVID-19):

Available data regarding the use of azithromycin as adjunctive treatment of COVID-19 due to SARS-CoV-2 are limited and inconclusive. Due to the potential for toxicities, the National Institutes of Health (NIH) COVID-19 treatment guidelines recommend against the use of azithromycin in combination with hydroxychloroquine outside of clinical trials.[65314] Azithromycin is being used in some COVID-19 protocols based on preliminary data; however, the risk of adverse events, particularly when given in combination with chloroquine or hydroxychloroquine (e.g., cardiac arrhythmias), should be considered. In an open-label, non-randomized clinical trial of hydroxychloroquine (n = 26), azithromycin was administered in combination with hydroxychloroquine to prevent bacterial superinfection in 6 patients. On day 6, all patients treated with the combination (hydroxychloroquine and azithromycin) were virologically cured compared to 57.1% of patients treated with hydroxychloroquine alone (n= 20).[65147] Another small study (n = 11) reviewed the same azithromycin plus hydroxychloroquine regimen and found nasopharyngeal swabs were still positive for SARS-CoV-2 in 8 of 10 patients 5 to 6 days after treatment initiation.[65198] In a retrospective analysis of a multicenter cohort study (n = 349) in patients with Middle East Respiratory Syndrome Coronavirus (MERS-CoV), 136 patients received macrolide therapy in combination with antiviral treatment. Macrolide therapy was not associated with a reduction in 90-day mortality compared to the control group.[65149]

Classifications

- General Anti-infectives Systemic
  - Systemic Antibiotics
    - Macrolide Antibiotics

- Sensory Organs
  - Ophthalmologicals
    - Ophthalmological Anti-infectives

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43632 – Centers for Disease Control and Prevention (CDC). Sexually Transmitted Diseases Treatment Guidelines 2010. MMWR. 2010;59:1-110

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65259 – Gibson PG, Yang IA, Upham JW, et al. Effect of azithromycin on asthma exacerbations and quality of life in adults with persistent uncontrolled asthma (AMAZES): a randomised, double-blind, placebo-controlled trial. Lancet 2017; 390: 659-68.

65260 – Gibson PG, Yang IA, Upham JW, et al. Efficacy of azithromycin in severe asthma from the AMAZES randomised trial. ERJ Open Res 2019; 5: 00056-2019.

65261 – Brusselle GG, Vanderstichelle C, Jordens P, et al. Azithromycin for prevention of exacerbations in severe asthma (AZISAST): a multicentre randomised double-blind placebo-controlled trial. Thorax 2013; 68: 322-9.

65314 – COVID-19 Treatment Guidelines Panel. Coronavirus Diseases 2019 (COVID-19) Treatment Guidelines. National Institutes of Health. Accessed May 12, 2020. Available at on the World Wide Web at: https://covid19treatmentguidelines.nih.gov/.

Administration Information

General Administration Information

For storage information, see the specific product information within the How Supplied section.

Route-Specific Administration

Oral Administration

Oral Solid Formulations

- May be taken with or without food; however, increased tolerability has been observed when the tablets are taken with food.[28855][43975]

Oral Liquid Formulations

Oral suspension (immediate-release, bottles for reconstitution):

- Review the reconstitution instructions for the particular product and package size, as the amount of water required for reconstitution may vary from manufacturer to manufacturer.
- Tap the bottle to loosen the powder. Add water in 2 portions and shake well after each portion.
- Azithromycin for oral suspension (100 mg/5 mL or 200 mg/5 mL strengths) may be taken with or without food.
- Measure dosage with a calibrated spoon, cup, or oral syringe.
- *Storage after reconstitution:* Store at 5 to 30 degrees C (41 to 86 degrees F). Discard any unused portion per manufacturer recommendations.[28855]

Oral suspension (1 gram single-dose packet):

- Do not use for administration of doses other than 1 gram.
- Zithromax for oral suspension (1-g single-dose packet) may be taken with or without food; however, administration with food may increase tolerability.
- Mix the entire contents of the packet in 60 mL (approximately 2 ounces) of water. Administer the entire contents immediately, then add an additional 60 mL of water, mix and administer to assure complete administration of the dosage.[43975]

Oral suspension (extended-release, bottles for reconstitution):

- Extended-release oral suspension (2 grams azithromycin) should be taken as a single dose at least 1 hour before or 2 hours after a meal.
- If a patient vomits within 5 minutes of the dose, the manufacturer recommends additional antibiotic treatment due to minimal absorption of the azithromycin dose. If a patient vomits between 5 to 60 minutes following the dose, consider alternate therapy. In patients with normal gastric emptying, if vomiting occurs 60 minutes or later after the dose, no additional antibiotic therapy is warranted. In patients with delayed gastric emptying, consider alternative therapy.
- Constitute with 60 mL of water, replace cap, and shake bottle well.
- *Storage after reconstitution:* Do not refrigerate. Use within 12 hours.[34473]

Injectable Administration

- Visually inspect parenteral products for particulate matter and discoloration prior to administration whenever solution and container permit.

Intravenous Administration

Reconstitution:

NOTE: When using the Vial-Mate drug reconstitution device, please refer to the Vial-Mate instructions for assembly and reconstitution.[43974]

- Add 4.8 mL of Sterile Water Injection to a concentration of 100 mg/mL.
- Because the vial is supplied under vacuum, it is recommended that a standard 5 mL (non-automated) syringe be used to ensure that the exact amount of 4.8 mL of sterile water is dispensed.
- Shake until all of the drug is dissolved.
- Further dilution is required.
- *Storage*: The reconstituted solution is stable for 24 hours when stored below 30 degrees C (86 degrees F). [43974]

Dilution:

- Dilute by transferring 5 mL of the reconstituted solution into a compatible diluent; use 500 mL of diluent for a concentration of 1 mg/mL and 250 mL of diluent for a concentration of 2 mg/mL.
- Compatible diluents include: 0.9% Sodium Chloride Injection, 0.45% Sodium Chloride Injection, 5% Dextrose Injection, Lactated Ringer's Injection, 5% Dextrose and 0.45% Sodium Chloride Injection with 20 mEq KCl, 5% Dextrose and Lactated Ringer's Injection, 5% Dextrose and 0.3% Sodium Chloride Injection, 5% Dextrose and 0.45% Sodium Chloride Injection, Normosol-M and 5% Dextrose Injection, and Normosol-R and 5% Dextrose Injection.
- *Storage:* Diluted solutions are stable for 24 hours at or below room temperature (30 degrees C or 86 degrees F) or for 7 days if stored under refrigeration (5 degrees C or 41 degrees F).[43974]

Intravenous infusion:

- Do not administer intramuscularly or via IV bolus.
- Other intravenous substances, additives, or medications should not be added to azithromycin or infused simultaneously through the same IV line.
- For a dose of 500 mg in 250 mL (concentration = 2 mg/mL), infuse over 1 hour. For a dose of 500 mg in 500 mL (concentration = 1 mg/mL), infuse over 3 hours.[43974]

Ophthalmic Administration

- For ophthalmic use only. Apply topically only to the eye.
- Instruct patient on proper instillation of eye solution.
- Avoid contamination of the eye solution; do not touch the tip of the eye dropper to the eye, fingertips, or other surface.
- Due to the difficulty of administering eye drops to pediatric patients, consider a 2 person administration approach to ensure proper installation of the drops (1 person to hold the eyelids open and 1 person to administer the drops).
- To avoid contamination, do not share an opened bottle among patients.[43976]

Clinical Pharmaceutics Information

From Trissel's 2™ Clinical Pharmaceutics Database

Azithromycin

1. **pH Range**

   pH 6.4 to 6.6

   # References

   McEvoy GK (ed). AHFS Drug Information (current edition). Bethesda, MD: American Society of Health-System Pharmacists.

2. **Stability**

   Azithromycin injection in intact containers stored as directed by the manufacturer is stable until the labeled expiration date. The manufacturer indicates the reconstituted azithromycin injection is stable for 24 hours at controlled room temperature. Infusion Solutions: The manufacturer indicates that azithromycin diluted to 1 to 2 mg/mL is stable for 24 hours at room temperature and 7 days refrigerated in the infusion solutions noted below. Dextrose 5% Dextrose 5% in lactated Ringer's Dextrose 5% in sodium chloride 0.3% Dextrose 5% in sodium chloride 0.45% Dextrose 5% in sodium chloride 0.45% with potassium chloride 20 mEq/L Lactated Ringer's injection Normosol-M in dextrose 5% Normosol-R in dextrose 5% Sodium chloride 0.45% Sodium chloride 0.9%

   # References

   Anon. Manufacturer's information and labeling. (Package insert).

3. **pH Effects**

Zhang et al. evaluated the stability of azithromycin in aqueous solution over a pH range of 4 to 7.2. They reported that azithromycin in aqueous solution exhibits maximum stability at pH 6.3. Below pH 6.0, the decomposition rate is rapid. At pH above 6.3 the rate of degradation increases with increasing pH. Mareno et al. similarly reported nearly total loss of azithromycin in hydrochloric acid and sodium hydroxide solutions with a concentration of 0.1 mol/L. Fiese et al. evaluated the stability of azithromycin in aqueous solution over the acidic pH range 1.0 to 4.1. Azithromycin underwent extensive decomposition at acidic pH. The time for 10% decomposition to occur at pH 2 was determined to be about 20 minutes at 37 degree C. The authors also reported that a ten-fold improvement in azithromycin stability occurred for each unit of pH increase within the tested range.

References

Fiese EF, Steffen SH. Comparison of acid stability of azithromycin and erythromycin A. J Antimicrob Chemother. 1990; 25sA:39-47

Moreno AD, da Silva MFC, Salgado HRN. Stability studies of azithromycin in ophthalmic preparations. Braz J Pharm Sci. 2009; 45:219-26

Zhang Y, Liu X, Cui Y, et al. Aspects of degradation kinetics of azithromycin in aqueous solution. Chromatographia. 2009; 70:67-73

4. **Light Exposure**

Azithromycin in solution has been shown to undergo increased decomposition if exposed to sunlight and ultraviolet light.

References

Moreno AD, da Silva MFC, Salgado HRN. Stability studies of azithromycin in ophthalmic preparations. Braz J Pharm Sci. 2009; 45:219-26

5. **Other Information**

Trace metals- Zhang et al. reported that the presence of EDTA does not alter the rate of azithromycin decomposition in solution indicating that trace metal ions are not likely to be involved in the degradation of azithromycin.

References

Zhang Y, Liu X, Cui Y, et al. Aspects of degradation kinetics of azithromycin in aqueous solution. Chromatographia. 2009; 70:67-73

6. **Stability Max**

Maximum reported stability periods: Reconstituted solution- 24 hours at room temperature. In infusion solutions- 24 hours at room temperature and 7 days refrigerated

References

Anon. Manufacturer's information and labeling. (Package insert).

Compounding Drug Information

From Trissel's 2™ Clinical Pharmaceutics Database

Azithromycin

1. **Identity/Properties**

Azithromycin occurs as a white or almost white crystalline material. Solubility: Azithromycin is practically insoluble in water but freely soluble in dehydrated ethanol and dichloromethane. pH: Azithromycin oral suspension has a pH between 8.5 and 11. Reconstituted azithromycin injection at 100 mg/mL is buffered with citric acid to a pH of 6.4 to 6.6. pKa: Azithromycin has apparent pKa values of 9.16 and 9.37.

References

Anon. The Merck Index, Whitehouse Station, New Jersey: Merck & Co., Inc. Current edition.

Anon. Martindale The Complete Drug Reference. London: The Pharmaceutical Press. Current edition and selected information from prior editions.

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Anon. Manufacturer's information and labeling. (Package insert and bulk material data sheet).

Yuhas LM, Fuerst JK, Timpano JM, et al (Pfizer Laboratories, New York). Personal communication: pKa values of CP-62,993, azithromycin, assigned using 1H NMR spectroscopy. New York: Pfizer Laboratories; November 24, 2009. Data on file. 2009; :TriPharma

2. **General Stability Info**

Azithromycin bulk powder and oral suspension powder should be packaged in tight containers and stored at controlled room temperature. Azithromycin oral capsules and tablets should be packaged in well-closed containers and stored at controlled room temperature. Single-dose packets of oral suspension powder should be stored between 5 and 30degree C. Azithromycin for injection vials should be stored at controlled room temperature. Reconstituted azithromycin oral suspension should be stored between 5 and 30degree C. After reconstitution, the oral suspension should be used according to the manufacturer's labeling for the specific product. Reconstituted azithromycin injection at 100 mg/mL is stable for 24 hours at controlled room temperature. Diluted for use to 1 to 2 mg/mL in a compatible infusion solution, the drug is stable for 24 hours at controlled room temperature and for seven days refrigerated.

References

Anon. The United States Pharmacopeia. Rockville, Maryland: The United States Pharmacopeial Convention. Current edition.

Anon. Manufacturer's information and labeling. (Package insert and bulk material data sheet).

3. **Enteral Feeds**

Klang et al. evaluated the compatibility of azithromycin oral suspension 200 mg/5 mL with Osmolite 1.2 (Abbott). Five milliliters of the drug was vortex mixed with 5 mL of the enteral nutrition product for one minute. The sample was placed in an incubated shaker at 37degree C for one hour. The mixture was evaluated for its ability to pass through a glass funnel stem (simulating a feeding tube). The portion of the mixture that passed through the funnel stem was filtered through a 100-micron filter and evaluated for retained solid matter. The test mixture passed through the glass funnel stem and did not demonstrate solid clumps upon filtration. Azithromycin oral suspension was reported to be compatible with Osmolite 1.2.

References

Klang M, McLymont V, Ng N. Osmolality, pH, and compatibility of selected oral liquid medications with an enteral product. J Parenter Enter Nutr. 2013; 37:689-94

4. **Rectal**

Kauss et al. (2012) screened several compounded dosage forms of azithromycin for potential rectal administration in children who cannot take oral dosage forms. A rectal suspension, two rectal gels, a hard gelatin capsule, and a polyethylene glycol (PEG) suppository formulation were assessed; the suppository was selected as the best candidate dosage form for further development. Kauss et al. (2013) then developed and evaluated the stability of a pediatric PEG azithromycin rectal suppository formulation. Each suppository contained azithromycin 419 mg (equivalent to anhydrous azithromycin 400 mg), PEG 1500 1760 mg, and PEG 4000 440 mg. The suppositories were prepared in three ways: as suspended, co-melted, and solid solution suppositories. The solid solution suppositories proved to be the preferred form. They were prepared by melting the PEGs at 90degree C using a water bath and then adding the azithromycin powder. The mixture was stirred until a homogenous limpid mixture was obtained. The mixture was cooled to 55 to 60degree C and was poured into 2-g suppository moulds. The suppositories were allowed to harden at room temperature in a dessicator for 24 hours. The stability of the solid solution azithromycin suppositories was evaluated at 40degree C and 75% relative humidity for 12 weeks packaged in alu/alu foil blisters (SGM India) and plastic moulds. In plastic moulds the suppositories underwent unacceptable changes including drug loss. However, in the alu/alu blisters the suppositories were much more stable. No change in the appearance and melting point of the suppositories occurred. HPLC analysis, differential scanning calorimetry, FTIR analysis, and X-ray diffraction found the azithromycin to be stable throughout the 12-week study period. In vitro drug release was unchanged, and in vivo bioavailability in rabbits was comparable to oral azithromycin.

References

Kauss T, Gaubert A, Boyer C, et al. Pharmaceutical development and optimization of azithromycin suppository for paediatric use. Int J Pharm. 2013; 441:218-26

Kauss T, Gaubert A, Boyer C, et al. Screening paediatric rectal forms of azithromycin as an alternative to oral or injectable treatment. Int J Pharm. 2012; 436:624-30

5. **Ophthalmic**

Ophthalmic preparations, like other sterile drugs, should be prepared in a suitable clean air environment using appropriate aseptic procedures. When prepared from non-sterile components, an appropriate and effective sterilization method must be employed. Mareno et al. evaluated factors that affect the stability of azithromycin ophthalmic solution. The ophthalmic solution had an azithromycin concentration of 1.667 mg/mL in an unspecified physiological solution. The ophthalmic solution was subjected to a variety of stresses to observe the effects on the drug's stability. A microbiological assay technique was used to assess stability. Extremes of pH were evaluated using hydrochloric acid and sodium hydroxide 0.1 mol/L along with heat of 70degree C; these resulted in nearly total loss of the drug in six hours. Exposure to hydrogen peroxide 0.3% yielded a similar result. Exposure of the azithromycin ophthalmic solution to sunlight and

ultraviolet light (at 254 and 284 nm) resulted in losses of 11, 38, and 20%, respectively, in 48 hours. The authors concluded that azithromycin ophthalmic solution pH and exposure to light should be controlled for stability.

References

Mareno AD, da Silva MFC, Salgado HRN. Stability studies of azithromycin in ophthalmic preparations. Braz J Pharm Sci. 2009; 45:219-26

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References

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34473 – Zmax (azithromycin 2 g extended release oral suspension) package insert. New York, NY: Pfizer Inc.; 2019 Apr.

43974 – Zithromax (azithromycin injection) package insert. New York, NY: Pfizer Inc.; 2019 Apr.

43975 – Zithromax (azithromycin 600 mg tablets and 1 g oral suspension) package insert. New York, NY: Pfizer Inc.; 2019 Apr.

43976 – AzaSite (azithromycin 1% ophthalmic solution) package insert. Lake Forest, IL: Akorn, Inc.; 2017 Jun.

Adverse Reactions

- abdominal pain
- acute generalized exanthematous pustulosis (AGEP)
- agitation
- anaphylactic shock
- anaphylactoid reactions
- anemia
- angioedema
- anorexia
- anosmia
- anxiety
- arthralgia
- asthenia
- atopic dermatitis
- azotemia
- blurred vision
- bronchospasm
- candidiasis
- chest pain (unspecified)
- chills
- cholestasis
- conjunctivitis
- constipation
- contact dermatitis
- corneal erosion
- cough
- diaphoresis
- diarrhea
- dizziness
- drowsiness
- Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS)
- dysgeusia
- dysosmia
- dyspepsia
- dyspnea
- dysuria
- eczema vaccinatum
- edema
- elevated hepatic enzymes
- emotional lability
- eosinophilia
- erythema
- erythema multiforme
- fatigue
- fever
- flatulence
- gastritis

- headache
- hearing loss
- hepatic failure
- hepatic necrosis
- hepatitis
- hyperbilirubinemia
- hyperglycemia
- hyperkalemia
- hyperkinesis
- hypoglycemia
- hypokalemia
- hyponatremia
- hypotension
- injection site reaction
- insomnia
- interstitial nephritis
- irritability
- Jarisch-Herxheimer reaction
- jaundice
- keratitis
- leukemia
- leukopenia
- lymphocytosis
- lymphoma
- lymphopenia
- maculopapular rash
- malaise
- melena
- myasthenia
- nasal congestion
- nausea
- neutropenia
- ocular discharge
- ocular irritation
- ocular pain
- ocular pruritus
- palpitations
- pancreatitis
- paresthesias
- pharyngitis
- photosensitivity
- pleural effusion
- pruritus
- pseudomembranous colitis
- pyloric stenosis
- QT prolongation
- rash
- renal failure (unspecified)
- rhinitis
- seizures
- sinusitis
- Stevens-Johnson syndrome
- stomatitis
- superinfection
- syncope
- thrombocytopenia
- tinnitus
- tongue discoloration
- torsade de pointes
- toxic epidermal necrolysis
- urticaria
- uveitis
- vaginitis
- ventricular tachycardia
- vertigo
- vesicular rash
- visual impairment
- vomiting
- xerophthalmia

The most common adverse reactions in patients receiving systemic regimens of azithromycin were gastrointestinal-related, which tended to be more frequent in the single-dose oral regimens in adults and higher doses in pediatrics. Among the most commonly reported gastrointestinal adverse events were diarrhea or loose stools (4% to 14% of adults; 1.8% to 10% of pediatric patients), nausea (1.8% to 18% adults; 0.4% to 4% pediatrics), vomiting (up to 13% adults; 1.1% to 14% pediatrics), abdominal pain (1.9% to 14% adults; 1.2% to 4% pediatrics), flatulence (up to 5% adults; up to 1% pediatric patients), and anorexia (2% adults; up to 1% pediatrics). Adverse GI effects occurring in up to 1% of adult and pediatric patients included gastritis, constipation, and dyspepsia. In adults, melena, oral moniliasis, and mucositis were also reported in up to 1%; stomatitis was reported by 1.9% of adults. In pediatric patients, enteritis was reported in up to 1%. In HIV-infected patients receiving prophylactic azithromycin (i.e., 1,200 mg once weekly) for disseminated Mycobacterium avium complex (MAC) the incidences of the following GI-related adverse events were higher than other patient populations: diarrhea or loose stools (12.9% to 52.8%), nausea (27% to 32.6%), abdominal pain (27% to 32.2%), dyspepsia (4.7% to 9%), flatulence (9% to 10.7%), vomiting (6.7% to 9%), and anorexia 2.1%. Postmarketing adverse gastrointestinal reactions have also included pancreatitis and rare reports of tongue discoloration.[28855] [34473] [43974] [43975]

In clinical trials, elevated hepatic enzymes (ALT, AST) occurred in 4% to 6% of patients receiving intravenous azithromycin. Elevations of ALT (SGPT), GGT, and AST (SGOT) occurred with an incidence of 1% to 2% in patients receiving oral therapy. Hyperbilirubinemia was noted in up to 3% of patients. Up to 1% of drug recipients experienced cholestasis with jaundice. Postmarketing reports indicate that systemic azithromycin has been associated with

abnormal liver function including cholestatic jaundice, hepatitis as well as rare cases of hepatic necrosis and hepatic failure, some of which have resulted in death.[28855] [34473] [43974] [43975]

Microbial overgrowth and superinfection can occur with antibiotic use. *C. difficile*-associated diarrhea (CDAD) or pseudomembranous colitis has been reported with azithromycin. If pseudomembranous colitis is suspected or confirmed, ongoing antibacterial therapy not directed against *C. difficile* may need to be discontinued. Institute appropriate fluid and electrolyte management, protein supplementation, *C. difficile*-directed antibacterial therapy, and surgical evaluation as clinically appropriate. Other infections reported during treatment with systemic azithromycin therapy during clinical trials included vaginitis (up to 2.8%), fungal superinfection (less than 1%), and fungal dermatitis (less than 1%). Cases of oral candidiasis (thrush) and vaginitis have also been noted during postmarketing use of the drug.[28855] [34473] [43974] [43975] [43976]

Hematologic adverse reactions noted in more than 1% of patients treated with systemic azithromycin during clinical trials included decreased hemoglobin, hematocrit, lymphocytes (lymphopenia), and neutrophils; as well as increased platelet counts, lymphocytes (lymphocytosis), neutrophils, and eosinophils (eosinophilia). Leukopenia, neutropenia, decreased platelet counts, elevated monocytes, and elevated basophils have been reported in less than 1% of adults. In children, anemia and leukopenia occurred in up to 1% of patients. Thrombocytopenia and mild neutropenia have been reported during postmarketing surveillance.[28855] [34473] [43974] [43975]

Respiratory adverse reactions have been reported in up to 1% of pediatric patients receiving azithromycin. These adverse reactions have included asthma, bronchitis, cough, pharyngitis, pleural effusion, and rhinitis. Dyspnea has been noted in 1.9% of patients receiving the intravenous formulation of azithromycin and in up to 1% of pediatric patients.[28855] [34473] [43974] [43975] Nasal congestion and sinusitis have been reported in less than 1% of patients receiving the ophthalmic preparation of azithromycin.[43976]

An injection site reaction has been associated with the administration of intravenous azithromycin. Approximately 12% of patients treated for pneumonia experienced a side effect related to the intravenous infusion; most common were pain at the injection site (6.5%) and local inflammation or erythema (3.1%). Application site reactions occurred in 1.9% of patients receiving infusions for pelvic inflammatory disease.[43974]

During clinical trials, recipients of systemic azithromycin reported fatigue (up to 3.9%), fever (2.1%), malaise (up to 1.1%), pain (up to 1%), chills and influenza-like symptoms (less than 1%), paresthesias (less than 1%), and asthenia (less than 1%). Cases of asthenia, paresthesias, fatigue, and malaise have also been noted during postmarketing use of the drug.[28855] [34473] [43974] [43975]

Central nervous system (CNS) adverse reactions have been associated with the use of systemic azithromycin. In patients receiving systemic formulations of azithromycin during clinical trials, vertigo (up to 1%), headache (up to 5%), dizziness (up to 3.9%), and somnolence or drowsiness (up to 1%) were reported. Additional CNS adverse reactions noted in less than 1% of pediatric drug recipients included agitation, nervousness, emotional lability, hostility, hyperkinesis, insomnia, and irritability. Postmarketing CNS effects have also included convulsions (seizures), hyperactivity, and syncope. Postmarketing psychiatric adverse reactions include aggression and anxiety. [28855] [34473] [43974] [43975]

Cardiovascular adverse reactions associated with systemic azithromycin therapy reported in up to 1% of patients include chest pain (unspecified) and palpitations. Although uncommon, these are potentially serious adverse reactions. In postmarketing experience, there have been reports of arrhythmias including ventricular tachycardia, hypotension, QT prolongation, and torsade de pointes.[28855] [34473] [43974] [43975]

Conjunctivitis and uveitis were reported in up to 1% of patients receiving systemic azithromycin. Taste perversion (dysgeusia) was reported in up to 1.3% of patients receiving systemic azithromycin and in less than 1% of patients using the ophthalmic preparation. Decreased hearing (0.9% to 1.1%) and tinnitus (0.9% and 3.4%) were noted by patients receiving weekly azithromycin doses of 1,200 mg. During postmarketing use of systemic azithromycin, cases of dysgeusia, dysosmia (smell perversion) and anosmia (loss of smell), and hearing disturbances including hearing loss, deafness or tinnitus have been reported.[28855] [34473] [43974] [43975] [43976]

Dermatological and hypersensitivity-related adverse reactions have been reported with azithromycin therapy. During clinical trials, a generalized rash was reported in up to 8.1% of azithromycin recipients. More specifically, rashes were noted in 1% of adult patients receiving oral therapy, up to 5% of pediatric patients, 1.9% of patients receiving IV

therapy, 3.4% to 8.1% of patients receiving a 1,200 mg once weekly dose, and in less than 1% of patients receiving ophthalmic therapy. Maculopapular rash and vesicular rash were reported in up to 1% of drug recipients. Patients also reported episodes of pruritus (up to 3.9%) and arthralgia (up to 3%). Other, less frequently reported adverse reactions (up to 1%) included photosensitivity, urticaria, bronchospasm, angioedema, and diaphoresis. Adverse events reported in less than 1% of patients using the ophthalmic solution included contact dermatitis, hives, and periocular swelling. Eczema vaccinatum (atopic dermatitis) was reported in up to 1% of pediatric patients, while dermatitis was noted in 2% of pediatric patients. Cases of angioedema, arthralgia, edema, photosensitivity, pruritus, rash, and urticaria have also been noted during postmarketing use. Serious skin reactions including erythema multiforme, Stevens-Johnson syndrome, toxic epidermal necrolysis, and drug reaction with eosinophilia and systemic symptoms (DRESS) have been reported. Azithromycin therapy should be withdrawn if there are signs and symptoms of an allergic reaction. Some patients have a recurrence of allergic symptoms once symptomatic treatment is withdrawn, even though azithromycin therapy is not reinstated. Correlation between the long tissue half-life and duration of allergic symptoms has not yet been determined. Anaphylaxis (anaphylactoid reactions, anaphylactic shock) has been reported, including fatal cases.[28855] [34473] [43974] [43975] [43976]

Systemic azithromycin therapy has been associated with cases of acute generalized exanthematous pustulosis (AGEP). The nonfollicular, pustular, erythematous rash starts suddenly and is associated with a fever above 38 degrees C. Typically, the first episode of AGEP appears 2 to 3 weeks after exposure to the inciting drug; however, unintentional reexposure may cause a second episode within 2 days.[27736] [43974]

Ocular irritation was the most frequently reported adverse reaction after ophthalmic administration of azithromycin and occurred in approximately 1% to 2% of patients. Other reported adverse reactions occurring in less than 1% of patients included blurred vision, corneal erosion, ocular discharge, ocular pain (burning, stinging, and irritation upon instillation), ocular pruritus, punctate keratitis, visual impairment (reduced visual acuity), and xerophthalmia.[43976]

The exacerbation of myasthenia gravis symptoms as well as the new onset of myasthenic syndrome have been reported with systemic azithromycin therapy. While rare, this side effect has been reported with other macrolide antibacterial agents.[28855] [34473] [43974] [43975]

Laboratory abnormalities have been noted with systemic azithromycin use. These include decreased bicarbonate (up to 1%), increased bicarbonate (less than 1%), hyperkalemia (1% to 2%), hypokalemia (less than 1%), hyponatremia (less than 1%), hyperglycemia and hypoglycemia (up to 1%), elevated phosphokinase (1% to 2%), elevated serum alkaline phosphatase (less than 1%), elevated LDH (up to 3%), and elevated phosphate (less than 1%).[28855] [34473] [43974] [43975]

An increased relapse rate of cancers of the blood or lymph nodes (i.e., leukemia, lymphoma), including death, has been observed in allogeneic stem cell transplant patients who were receiving azithromycin as prophylaxis for bronchiolitis obliterans syndrome (BOS). In a clinical trial (n = 480) evaluating the effectiveness of long-term azithromycin to prevent BOS in patients who undergo donor stem cell transplants for cancers of the blood or lymph nodes, cancer relapse was observed in 32.9% of azithromycin-treated patients vs. 20.8% of patients who were given a placebo. The 2-year survival rate was 56.6% in azithromycin-treated patients vs. 70.1% in those given a placebo. [63410]

The Jarisch-Herxheimer reaction is a self-limiting systemic reaction that has been reported in the setting of spirochete infections, such as Lyme disease, syphilis, relapsing fever, and leptospirosis, after the initiation of antimicrobial therapy. It is characterized by fever, chills, myalgias, headache, exacerbation of cutaneous lesions, tachycardia, hyperventilation, vasodilation with flushing, and mild hypotension. Less commonly, symptoms may include meningitis, pulmonary failure, hepatic and renal dysfunction, myocardial injury, premature uterine contractions in pregnant patients, and worsening cerebral function as well as strokes and seizures. The reaction has been noted in up to 30% of patients with early Lyme disease. The timing of the reaction varies by underlying infection but typically presents within a few hours after the initiation of antibiotics. For Lyme disease, the reaction usually begins within 1 to 2 hours after starting therapy and disappears within 12 to 24 hours. The reaction after treatment in syphilis usually starts at 4 hours, peaks at 8 hours, and subsides by 16 hours whereas it starts at about 1 to 2 hours, peaks at 4 hours, and subsides by 8 hours after treatment in relapsing fever. The pathogenesis of this reaction is unknown but may be due to the release of spirochetal heat-stable pyrogen. Fluids and antipyretics can be used to alleviate symptoms and duration of the reaction if severe.[29817] [63846] [63847] [63848]

Renal adverse reactions in patients receiving systemic regimens of azithromycin included nephritis (up to 1% adults) and dysuria (up to 1% pediatric patients). Elevated BUN (azotemia) and elevated creatinine occurred in up to 1% of patients, with elevated creatinine reported in 4% to 6% of patients receiving IV therapy. Postmarketing adverse reactions have also included acute renal failure (unspecified) and interstitial nephritis.[28855] [34473] [43974] [43975]

Azithromycin has been associated with infantile hypertrophic pyloric stenosis (IHPS), particularly in newborns younger than 2 weeks of age. In a retrospective study of 148 infants given azithromycin during the first 14 days of life, IHPS developed in 3 patients (2%) for an odds ratio (OR) of 8.26 (95% CI: 2.62 to 26; p less than 0.001). Of 729 infants aged 15 to 42 days at the time of azithromycin exposure, 5 patients developed IHPS for an OR of 2.98 (95% CI: 1.24 to 7.2; p = 0.015). No infants aged 43 to 90 days at the time of azithromycin exposure developed IHPS. A male predominance was also observed, as all 8 infants who developed IHPS were boys. IHPS was also reported in 2 former 32-week premature infants (2 out of 3 triplets) who received 5 days of azithromycin after hospitalization at 7 weeks of age. The infants were diagnosed with IHPS at 89 and 94 days of age, respectively, and both infants underwent surgical pyloromyotomies. Infants, particularly males who receive azithromycin within the first few weeks of life, should be closely monitored for signs and symptoms of IHPS for 6 weeks after azithromycin treatment. Pyloric stenosis rarely affects infants older than 3 months.[57925] [57926] Pyloric stenosis has been noted in postmarketing reports.[28855]

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Contraindications/Precautions

Absolute contraindications are italicized.

- *hepatitis*
- *jaundice*
- *macrolide hypersensitivity*
- allogeneic stem cell transplant
- apheresis
- AV block
- bradycardia
- breast-feeding
- cardiomyopathy
- celiac disease
- contact lenses
- diarrhea
- females
- fever
- geriatric
- heart failure
- hepatic disease
- human immunodeficiency virus (HIV) infection
- hyperparathyroidism
- hypocalcemia
- hypokalemia
- hypomagnesemia
- hypothermia
- hypothyroidism
- infants
- leukemia
- long QT syndrome
- lymphoma
- myasthenia gravis
- myocardial infarction
- neonates
- pheochromocytoma
- pregnancy
- pseudomembranous colitis
- QT prolongation
- renal failure
- renal impairment
- rheumatoid arthritis
- serious hypersensitivity reactions or anaphylaxis
- sexually transmitted disease
- sickle cell disease
- sleep deprivation
- sodium restriction
- stroke
- sunlight (UV) exposure
- systemic lupus erythematosus (SLE)
- viral infection

Azithromycin does not treat viral infection (e.g., common cold). Prescribing azithromycin in the absence of a proven or strongly suspected bacterial infection or a prophylactic indication is unlikely to provide benefit to the patient and increases the risk of the development of drug-resistant bacteria. Patients should be told to complete the full course of treatment, even if they feel better earlier.

Azithromycin is contraindicated in patients with a known *azithromycin or macrolide hypersensitivity*. Azithromycin has a rare risk of serious hypersensitivity reactions or anaphylaxis, including angioedema and severe dermatologic reactions, including acute generalized exanthematous pustulosis (AGEP), Stevens-Johnson syndrome, and toxic epidermal necrolysis. Fatalities associated with these severe reactions have been reported. There is a risk of cross sensitivity with other macrolide antibiotics. Some patients have a recurrence of allergic symptoms once symptomatic treatment is withdrawn, even though azithromycin therapy is not reinstated.[28855] [43974]

Systemic azithromycin is contraindicated in patients with a history of jaundice and/or hepatic dysfunction associated with the prior use of azithromycin. Systemically administered azithromycin should be used with caution in patients who have hepatic disease. In addition, abnormal hepatic function, hepatitis, cholestatic jaundice, hepatic necrosis, and hepatic failure have been reported with use, including cases that have resulted in death. Monitor liver function tests in patients receiving systemic azithromycin. Discontinue treatment immediately if signs and symptoms of hepatitis and liver dysfunction occur.[28855]

Safe use of systemically-administered azithromycin in patients with severe renal impairment has not been determined; limited data are available. Azithromycin should be used cautiously in patients with preexisting severe renal impairment or renal failure (CrCl less than 10 ml/min).[28855]

Almost all antibacterial agents, including systemic azithromycin, have been associated with pseudomembranous colitis or *C. difficile*-associated diarrhea (CDAD) which may range in severity from mild to life-threatening. Treatment with antibacterial agents alters the normal flora of the colon leading to overgrowth of *C. difficile*. Consider pseudomembranous colitis in patients presenting with diarrhea after antibacterial use. Careful medical history is necessary as pseudomembranous colitis has been reported to occur over 2 months after the administration of antibacterial agents. If pseudomembranous colitis is suspected or confirmed, ongoing antibacterial therapy not directed against *C. difficile* may need to be discontinued. Institute appropriate fluid and electrolyte management, protein supplementation, *C. difficile*-directed antibacterial therapy, and surgical evaluation as clinically appropriate. [28855]

Macrolides are associated with QT prolongation; cases of cardiac arrhythmias and torsade de pointes (TdP) have been reported during postmarketing surveillance.[34473] Caution is warranted when using the drug in high-risk patients, including those with known prolongation of the QT interval or a history of TdP.[34473] Use azithromycin with caution in patients with conditions that may increase the risk of QT prolongation including congenital long QT syndrome, bradycardia, AV block, heart failure, stress-related cardiomyopathy, myocardial infarction, stroke, hypomagnesemia, hypokalemia, hypocalcemia, or in patients receiving medications known to prolong the QT interval or cause electrolyte imbalances. Females, geriatric patients, patients with sleep deprivation, pheochromocytoma, sickle cell disease, hypothyroidism, hyperparathyroidism, hypothermia, systemic inflammation (e.g., human immunodeficiency virus (HIV) infection, fever, and some autoimmune diseases including rheumatoid arthritis, systemic lupus erythematosus (SLE), and celiac disease) and patients undergoing apheresis procedures (e.g., plasmapheresis [plasma exchange], cytapheresis) may also be at increased risk for QT prolongation.[28432] [28457] [43974] [56592] [65180] In patients taking azithromycin with another drug that prolongs the QT interval (see Therapeutic Drug Monitoring for recommendations specific to using azithromycin with chloroquine or hydroxychloroquine in the treatment of COVID-19), obtain a pre-treatment QTc using a standard 12-lead ECG, telemetry, or mobile ECG device. Obtain baseline electrolytes, including calcium, magnesium, and potassium. Determine if the patient is currently on any QT-prolonging medications that can be discontinued. Document high-risk cardiovascular and comorbid conditions. If the baseline QTc is 500 msec or more and/or the patient has an inherent tendency to develop an exaggerated QTc response (i.e., change of 60 msec or more), correct contributing electrolyte abnormalities, review and discontinue other unnecessary QTc prolonging medications, and proceed with close QTc surveillance. Obtain an initial on-therapy QTc approximately 2 to 4 hours after the first dose and then again at 48 and 96 hours after treatment initiation. If the baseline QTc is 460 to 499 msec (prepubertal), 470 to 499 msec (postpubertal males), or 480 to 499 msec (postpubertal females), correct contributing electrolyte abnormalities, review and discontinue other unnecessary QTc prolonging medications, and obtain an initial on-therapy QTc 48 and 96 hours after treatment initiation. If the baseline QTc is less than 460 msec (prepubertal), less than 470 msec (postpubertal males), or less than 480 msec (postpuberal females), correct electrolyte abnormalities and obtain an initial on-therapy QTc 48 and 96 hours after treatment initiation.[65170] Data from a cohort study in adults have associated azithromycin with an increased risk of cardiovascular death. The study included persons receiving prescriptions for azithromycin (n = 347,795), amoxicillin (n = 1,348,672), ciprofloxacin (n = 264,626), levofloxacin (n = 193,906), and matched persons receiving no antibiotics (n = 1,391,180). Analysis of the data found those persons receiving a 5-day course of azithromycin had a significantly greater risk of cardiovascular death than persons not treated with antibiotics (HR: 2.88; 95% CI: 1.79 to 4.63; p less than 0.001), persons treated with 5 days of amoxicillin (HR: 2.49; 95% CI: 1.38 to 4.50; p = 0.002), and persons in the first 5 days of ciprofloxacin therapy (HR: 3.49; 95% CI: 1.32 to 9.26; p = 0.01); mortality rate did not differ from levofloxacin.[50182] [50183]

Clinical trials of oral and intravenous azithromycin and other reported clinical experience has not identified overall differences in safety and effectiveness between geriatric and younger adult subjects. Greater sensitivity of some older individuals cannot be ruled out. Health care providers are advised that geriatric patients may be more susceptible to drug-associated effects on the QT interval.[28855] [43974] The federal Omnibus Budget Reconciliation Act (OBRA) regulates medication use in residents of long-term care facilities. According to OBRA, use of antibiotics should be limited to confirmed or suspected bacterial infections. Antibiotics are non-selective and may result in the eradication of beneficial microorganisms while promoting the emergence of undesired ones, causing secondary infections such as oral thrush, colitis, or vaginitis. Any antibiotic may cause diarrhea, nausea, vomiting, anorexia, and hypersensitivity reactions.[60742]

Available data over several decades with systemic azithromycin use in pregnant women have not identified any drug-associated risks for major birth defects, miscarriage, or adverse maternal or fetal outcomes. Developmental toxicity studies in animals showed no drug-induced fetal malformations at doses up to 4 times the adult human daily dose of 500 mg based on body surface area; however, decreased viability and delayed development were observed in the offspring of pregnant rats given azithromycin at a dose equivalent to 4 times the adult human daily dose from day 6 of pregnancy through weaning.[28855] In a nested, case-control study (n = 87,020 controls; 8,702 cases) within the Quebec Pregnancy Cohort, systemic azithromycin use during early pregnancy was associated with an increased risk of spontaneous abortion (adjusted odds ratio (aOR) 1.65, 95% CI 1.34 to 2.02, 110 exposed cases); residual confounding by severity of infection may be a potential limitation of this study.[62176] In a large population-based cohort study (n = 104,605 live births) assessing systemic macrolide (n = 8,632) or penicillin (n = 95,973) use during pregnancy and the risk of major malformations, macrolide use in the first trimester was associated with increased risk of any malformation (27.7 vs. 17.7 per 1,000 live births; adjusted risk ratio 1.55, 95% CI 1.19 to 2.03), and in particular, cardiovascular malformations (10.6 vs. 6.6 per 1,000 live births; adjusted risk ratio 1.62, 95% CI 1.05 to 2.51). Specific findings for azithromycin use during the first trimester were precluded due to few events. Macrolide use during the second and third trimesters showed no increased risk of any major malformation (19.5 vs. 17.3 per 1,000 live births; adjusted risk ratio 1.13, 95% CI 0.94 to 1.36); however, a borderline association with gastrointestinal malformations was observed (adjusted risk ratio 1.89, 95% CI 1 to 3.58). Macrolide use in any trimester was associated with an increased risk of genital malformations (adjusted risk ratio 1.58, 95% CI 1.14 to 2.19), mainly hypospadias.[65012] Additionally, in another large population-based cohort study (n = 139,938 live births) assessing systemic antibiotic exposure during the first trimester of pregnancy (n = 15,469 exposures) and the risk of major birth defects, macrolide exposure was associated with an increased risk of digestive system malformations (adjusted odds ratio (aOR) 1.46, 95% CI 1.04 to 2.06, 35 exposed cases).[62177]

Azithromycin is present in human breast milk. Non-serious adverse reactions have been reported in breast-fed infants after maternal administration of azithromycin. Consider the developmental and health benefits of breast-feeding along with the mother's clinical need for azithromycin and any potential adverse effects on the breast-fed infant from azithromycin or the underlying maternal condition. Monitor the breast-fed infant for diarrhea, vomiting, or rash. There are no available data on the effects of azithromycin on milk production. Azithromycin breast milk concentrations were measured in 20 women receiving a single 2 g oral dose during labor. Azithromycin was present in breast milk up to 4 weeks after dosing. Another study of 8 women receiving azithromycin IV before incision of cesarean section showed azithromycin was present in breast milk up to 48 hours later.[28855] A prospective observational study assessing the safety of macrolide antibiotics during lactation found that 12.7% (n = 55) of babies exposed to macrolides via breast milk experienced adverse events including rash, diarrhea, loss of appetite, and somnolence. The adverse event rate was similar to that seen in babies in a control group whose mothers were treated with amoxicillin (8.3%). Only 10 mothers in the study received azithromycin, 6 received clarithromycin, 2 received erythromycin, and the remainder were treated with roxythromycin.[45767] A population-based cohort study found that babies diagnosed with infantile hypertrophic pyloric stenosis were 2.3 to 3 times more likely to have been exposed to a macrolide antibiotic through breast milk during the first 90 days of life than babies not exposed during that same time period. The study did not specify which antibiotic the mothers of affected babies were prescribed; however, the majority of macrolide prescriptions were for erythromycin (72%), with 7% for azithromycin and 1.7% for clarithromycin.[45779] Previous American Academy of Pediatrics (AAP) recommendations consider erythromycin to be usually compatible with breast-feeding; azithromycin has not been evaluated by the AAP.[27500]

Use azithromycin with caution and with proper monitoring in young infants and neonates; there have been reports of infantile hypertrophic pyloric stenosis (IHPS) occurring in young infants after azithromycin therapy.[43974] [57925] [57926] Because azithromycin is sometimes used for the treatment of conditions that are associated with significant mortality or morbidity (e.g., pertussis), weigh the benefit of azithromycin therapy against the potential risk of developing IHPS. Inform parents and other caregivers to contact their physician if vomiting or irritability with feeding occurs. In a retrospective study of 148 infants given azithromycin during the first 14 days of life, IHPS developed in 3 patients (2%) for an odds ratio of 8.26 (95% CI: 2.62 to 26; p less than 0.001). Of 729 infants aged 15 to 42 days at the time of azithromycin exposure, 5 patients developed IHPS for an OR of 2.98 (95% CI: 1.24 to 7.2; p = 0.015). A male predominance was also observed, as all 8 infants who developed IHPS were boys. No infants aged 43 to 90 days at the time of azithromycin exposure developed IHPS; however, there have been 2 case reports of older infants developing IHPS (89 and 94 days old at diagnosis, respectively).[57925] [57926]

Direct sunlight (UV) exposure should be minimized during therapy with systemic azithromycin. Photosensitivity has been reported as an adverse reaction to azithromycin.[28855] [34473] [43975]

Some intravenous formulations of azithromycin contain a total of 4.96 mEq (114 mg) of sodium per 500-mg vial. The sodium amounts should be considered in patients with requirements for sodium restriction or blunted natriuresis to salt loading (i.e., cardiac disease or hypertension).[43974]

Patients who wear contact lenses should avoid wearing them while being treated for an ocular infection with azithromycin ophthalmic solution.[43976]

Exacerbation of symptoms of myasthenia gravis and new onset of myasthenic syndrome have been reported in patients receiving systemic azithromycin therapy.[28855]

While azithromycin may be used to treat certain sexually transmitted diseases (STD), the drug may mask or delay the symptoms of incubating syphilis when given as part of an STD treatment regimen. All patients with a diagnosed or suspected STD should be tested for other STDs, which may include HIV, syphilis, chlamydia, and gonorrhea, at the time of diagnosis. Initiate appropriate therapy and perform follow-up testing as recommended based upon sexually transmitted disease diagnosis.[28855] [59799]

Do not use azithromycin for long-term prophylaxis of bronchiolitis obliterans syndrome (BOS) in patients with cancers of the blood or lymph nodes (i.e. leukemia, lymphoma) who undergo an allogeneic stem cell transplant because of the increased risk for cancer relapse or death.[63410]

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Mechanism of Action

Azithromycin inhibits protein synthesis in bacterial cells by binding to the 50S subunit of bacterial ribosomes. Action is generally bacteriostatic but can be bactericidal in high concentrations or against susceptible organisms. Azithromycin is more active against gram-negative organisms but has less activity against streptococci and staphylococci than does erythromycin; erythromycin-resistant gram-positive isolates demonstrate cross-resistance to azithromycin.[34473] [50470] Azithromycin concentrates in phagocytes and fibroblasts leading to high intracellular concentrations. Drug distribution to inflamed tissues is thought to occur from the concentration in phagocytes.[43975]

The susceptibility interpretive criteria for azithromycin are delineated by pathogen. The MICs are defined for beta-hemolytic streptococci, *S. viridans* group, and *S. pneumoniae* as susceptible at 0.5 mcg/mL or less, intermediate at 1 mcg/mL, and resistant at 2 mcg/mL or more. The MICs are defined for *Staphylococcus* sp. as susceptible at 2 mcg/mL or less, intermediate at 4 mcg/mL, and resistant at 8 mcg/mL or more. The MICs are defined for *S. enterica* ser. Typhi

as susceptible at 16 mcg/mL or less and resistant at 32 mcg/mL or more. The MICs are defined for *H. influenzae* and *H. parainfluenzae* as susceptible at 4 mcg/mL or less. The MICs are defined for *N. meningitidis* as susceptible at 2 mcg/mL or less, which may be only appropriate for prophylaxis of meningococcal case contacts and does not apply to treatment of invasive disease. The MICs are defined for *N. gonorrhoeae* as susceptible at 1 mcg/mL or less, presuming use of a 1 g single dose regimen that includes an additional antimicrobial agent.[63320] [63321]

Macrolides have been reported to have immunomodulatory properties in pulmonary inflammatory disorders. They may downregulate inflammatory responses and reduce the excessive cytokine production associated with respiratory viral infections; however, their direct effects on viral clearance are uncertain. Immunomodulatory mechanisms may include reducing chemotaxis of neutrophils (PMNs) to the lungs by inhibiting cytokines (i.e., IL-8), inhibition of mucus hypersecretion, decreased bacterial adhesion to the epithelium, decreased production of reactive oxygen species, accelerating neutrophil apoptosis, and blocking the activation of nuclear transcription factors.[65149] [65150] [65151] [65152] [65153]

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Pharmacokinetics

Azithromycin is administered orally, intravenously, and topically to the eye. Following systemic administration, it is widely distributed to body tissues and fluids including bone, prostate, ovary, uterus, stomach, liver, middle ear, lung, tonsils and adenoids, and sputum.[28855][51754] Azithromycin exhibits significant intracellular penetration and concentrates within fibroblasts and phagocytes. As a result, tissue concentrations are significantly higher than are plasma concentrations.[34473][51757] Azithromycin is distributed widely into brain tissue but not into cerebrospinal fluid or the aqueous humor of the eye.[31755] Protein binding varies with plasma concentration; 51% of the drug is bound at low concentrations (0.02 mcg/ml) and this binding decreases to 7% at higher concentrations (2 mcg/ml).[28855] Azithromycin has a long half-life in both adults (40 to 68 hours) and children (32 to 64 hours), which is partially explained by its extensive tissue uptake and slow release.[28855][43975][51754][51755][51756] Elimination is largely in the feces, following excretion into the bile, with less than 14% excreted in the urine.[28855][43974]

Affected cytochrome P450 isoenzymes and drug transporters: none

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Route-Specific Pharmacokinetics

- **Oral Route**

  Immediate-release suspension

  Peak concentrations of azithromycin occur approximately 2 hours after administration.[51753] Food increases the Cmax by approximately 56%, but the extent of absorption is unaltered.[28855]

  Single-dose (1 g) immediate-release suspension

  Administration with food increased the Cmax by 46% and the AUC by 14%.[43975]

  250 mg and 500 mg immediate-release tablets

  The absolute bioavailability is approximately 38%. The Cmax for a 5-day regimen of 250 mg PO ranged from 0.24 to 0.43 mcg/mL and the AUC was 14.9 mcg x hour/mL. The Cmax for 3-day regimen of 500 mg PO ranged from 0.44 to 0.54 mcg/mL and the AUC was 17.4 mcg x hour/mL. Food increases the Cmax by approximately 23%, but the extent of absorption is unaltered.[28855]

  600 mg immediate-release tablets

  The absolute bioavailability is 34%. For a 1,200 mg dose, the Cmax is 0.33 mcg/mL, the Tmax is 2.5 hours, and the AUC is 6.8 mcg x hour/mL. Administration with food increased the Cmax by 31%; however, the AUC was unchanged.[43975]

  Extended-release suspension

  The bioavailability of the extended-release suspension compared to the immediate-release suspension is 83%. Food increases absorption. Administration with a high-fat meal increased the Cmax by 115% and the AUC by 23% compared to the fasted state. Administration with a standard meal increased the Cmax by 119% and the AUC by 12%.[34473] Peak concentrations occur approximately 3 hours (range 2 to 8 hours)

after administration.[51753] Extended-release suspension and immediate-release formulations are not bioequivalent and cannot be interchanged.[34473]

- **Intravenous Route**

  Azithromycin doses of 500 mg IV daily administered over 1 hour for 2 to 5 days resulted in a mean Cmax +/- SD of 3.63 +/- 1.60 mcg/mL, a 24-hour trough of 0.20 +/- 0.15 mcg/mL, and an AUC_{24} of 9.60 +/- 4.80 mcg x hour/mL. Doses of 500 mg IV administered over 3 hours resulted in a mean Cmax of 1.14 +/- 0.14 mcg/mL, a 24-hour trough of 0.18 +/- 0.02 mcg/mL, and an AUC_{24} of 8.03 +/- 0.86 mcg x hour/mL. Similar pharmacokinetic values were obtained in patients that received the same 3-hour IV infusion regimen for 2 to 5 days. A comparison of the pharmacokinetics after the first and fifth daily doses showed an increase in AUC_{24} of 61%, reflecting a 3-fold rise in trough concentrations. Cmax increased by 8%. [43974]

- **Other Route(s)**

  Ophthalmic Route

  The systemic concentration of azithromycin after ocular administration is estimated to be below quantifiable limits (10 ng/mL or less).[43976]

Special Populations

- **Hepatic Impairment**

  Azithromycin pharmacokinetics have not been studied in patients with hepatic impairment. Azithromycin is not substantially metabolized.[28855]

- **Renal Impairment**

  After the oral administration of a single 1,000 mg oral dose of azithromycin, mean Cmax was increased by 5.1% and the AUC increased by 4.2% in subjects with mild to moderate renal impairment (GFR 10 to 80 mL/minute) compared to subjects with normal renal function (GFR greater than 80 mL/minute). The Cmax and AUC of azithromycin are increased by 61% and 35%, respectively, in patients with severe renal impairment (GFR less than 10 mL/minute).[28855]

- **Pediatrics**

  Immediate-release oral formulations:

  Children and Adolescents 6 to 15 years

  In a pharmacokinetic study in pediatric patients 6 years to 15 years who received 10 mg/kg azithromycin orally on day 1, followed by 5 mg/kg orally on days 2 to 5, mean Cmax, AUC, and clearance were 0.383 mcg/mL, 3.109 mcg x hour/mL, and 4.27 L/kg/hour, respectively.[51756] [51760]

  Infants and Children 6 months to 5 years

  Maximum plasma concentrations (Cmax) and area under the curve (AUC) have been reported to be lower, and clearance has been reported to be higher for younger pediatric patients compared with older patients. In a pharmacokinetic study in pediatric patients 6 months to 5 years who received azithromycin 10 mg/kg orally on day 1, followed by 5 mg/kg orally on days 2 to 5, mean Cmax, AUC, and clearance were 0.224

mcg/mL, 1.841 mcg x hour/mL, and 2.27 L/kg/hour, respectively. Mean elimination half-life was 32 hours. [51755] [51756]

Extended-release suspension:

Infants, Children, and Adolescents 3 months to 16 years

The pharmacokinetics of azithromycin were characterized after a single 60 mg/kg dose in pediatric patients 3 months to 16 years. Although there was high inter-patient variability in systemic exposure (AUC and Cmax) across the age groups studied, individual azithromycin AUC and Cmax values in pediatric patients were comparable to or higher than those after administration of 2 g extended-release suspension in adults. [34473]

Intravenous formulation:

Infants, Children, and Adolescents 6 months to 15 years

In a pharmacokinetic study in pediatric patients (6 months to less than 16 years), after a single azithromycin IV dose of 10 mg/kg (Max: 500 mg/dose), mean peak concentration was 2.4 mcg/mL, clearance was 15.3 mL/minute/kg, and elimination half-life was 65 hours. Peak concentrations occurred 1 hour after administration. No differences in pharmacokinetic parameters were noted among different age groups.[31756]

- **Geriatric**

  The pharmacokinetic parameters of azithromycin in older volunteers (65 to 85 years) were similar to those in younger volunteers for a 5-day oral regimen.[28855]

- **Gender Differences**

  No significant differences in azithromycin pharmacokinetics occur based on gender.[28855]

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Pregnancy/Breast-feeding

Pregnancy

Available data over several decades with systemic azithromycin use in pregnant women have not identified any drug-associated risks for major birth defects, miscarriage, or adverse maternal or fetal outcomes. Developmental toxicity studies in animals showed no drug-induced fetal malformations at doses up to 4 times the adult human daily dose of 500 mg based on body surface area; however, decreased viability and delayed development were observed in the offspring of pregnant rats given azithromycin at a dose equivalent to 4 times the adult human daily dose from day 6 of pregnancy through weaning.[28855] In a nested, case-control study (n = 87,020 controls; 8,702 cases) within the Quebec Pregnancy Cohort, systemic azithromycin use during early pregnancy was associated with an increased risk of spontaneous abortion (adjusted odds ratio (aOR) 1.65, 95% CI 1.34 to 2.02, 110 exposed cases); residual confounding by severity of infection may be a potential limitation of this study.[62176] In a large population-based cohort study (n = 104,605 live births) assessing systemic macrolide (n = 8,632) or penicillin (n = 95,973) use during pregnancy and the risk of major malformations, macrolide use in the first trimester was associated with increased risk of any malformation (27.7 vs. 17.7 per 1,000 live births; adjusted risk ratio 1.55, 95% CI 1.19 to 2.03), and in particular, cardiovascular malformations (10.6 vs. 6.6 per 1,000 live births; adjusted risk ratio 1.62, 95% CI 1.05 to 2.51). Specific findings for azithromycin use during the first trimester were precluded due to few events. Macrolide use during the second and third trimesters showed no increased risk of any major malformation (19.5 vs. 17.3 per 1,000 live births; adjusted risk ratio 1.13, 95% CI 0.94 to 1.36); however, a borderline association with gastrointestinal malformations was observed (adjusted risk ratio 1.89, 95% CI 1 to 3.58). Macrolide use in any trimester was associated with an increased risk of genital malformations (adjusted risk ratio 1.58, 95% CI 1.14 to 2.19), mainly hypospadias.[65012] Additionally, in another large population-based cohort study (n = 139,938 live births) assessing systemic antibiotic exposure during the first trimester of pregnancy (n = 15,469 exposures) and the risk of major birth defects, macrolide exposure was associated with an increased risk of digestive system malformations (adjusted odds ratio (aOR) 1.46, 95% CI 1.04 to 2.06, 35 exposed cases).[62177]

Breast-Feeding

Azithromycin is present in human breast milk. Non-serious adverse reactions have been reported in breast-fed infants after maternal administration of azithromycin. Consider the developmental and health benefits of breast-feeding along with the mother's clinical need for azithromycin and any potential adverse effects on the breast-fed infant from

azithromycin or the underlying maternal condition. Monitor the breast-fed infant for diarrhea, vomiting, or rash. There are no available data on the effects of azithromycin on milk production. Azithromycin breast milk concentrations were measured in 20 women receiving a single 2 g oral dose during labor. Azithromycin was present in breast milk up to 4 weeks after dosing. Another study of 8 women receiving azithromycin IV before incision of cesarean section showed azithromycin was present in breast milk up to 48 hours later.[28855] A prospective observational study assessing the safety of macrolide antibiotics during lactation found that 12.7% (n = 55) of babies exposed to macrolides via breast milk experienced adverse events including rash, diarrhea, loss of appetite, and somnolence. The adverse event rate was similar to that seen in babies in a control group whose mothers were treated with amoxicillin (8.3%). Only 10 mothers in the study received azithromycin, 6 received clarithromycin, 2 received erythromycin, and the remainder were treated with roxythromycin.[45767] A population-based cohort study found that babies diagnosed with infantile hypertrophic pyloric stenosis were 2.3 to 3 times more likely to have been exposed to a macrolide antibiotic through breast milk during the first 90 days of life than babies not exposed during that same time period. The study did not specify which antibiotic the mothers of affected babies were prescribed; however, the majority of macrolide prescriptions were for erythromycin (72%), with 7% for azithromycin and 1.7% for clarithromycin.[45779] Previous American Academy of Pediatrics (AAP) recommendations consider erythromycin to be usually compatible with breast-feeding; azithromycin has not been evaluated by the AAP.[27500]

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Interactions

Level 1 (Severe)

- Cisapride
- Dronedarone
- Pimozide
- Thioridazine

Level 2 (Major)

- Aclidinium; Formoterol
- Albuterol
- Albuterol; Ipratropium
- Alfuzosin

- Amiodarone
- Amitriptyline
- Amitriptyline; Chlordiazepoxide
- Anagrelide
- Apomorphine
- Arformoterol
- Aripiprazole
- Arsenic Trioxide
- Artemether; Lumefantrine
- Asenapine
- Atomoxetine
- Bedaquiline
- Bismuth Subcitrate Potassium; Metronidazole; Tetracycline
- Bismuth Subsalicylate; Metronidazole; Tetracycline
- Budesonide; Formoterol
- Buprenorphine
- Buprenorphine; Naloxone
- Ceritinib
- Chloroquine
- Chlorpromazine
- Ciprofloxacin
- Citalopram
- Clofazimine
- Clomipramine
- Clozapine
- Codeine; Phenylephrine; Promethazine
- Codeine; Promethazine
- Crizotinib
- Dasatinib
- Degarelix
- Desflurane
- Desipramine
- Deutetrabenazine
- Dextromethorphan; Promethazine
- Dextromethorphan; Quinidine
- Disopyramide
- Dofetilide
- Dolasetron
- Dolutegravir; Rilpivirine
- Donepezil
- Donepezil; Memantine
- Doxepin
- Droperidol
- Efavirenz
- Efavirenz; Emtricitabine; Tenofovir
- Efavirenz; Lamivudine; Tenofovir Disoproxil Fumarate
- Eliglustat
- Emtricitabine; Rilpivirine; Tenofovir alafenamide
- Emtricitabine; Rilpivirine; Tenofovir disoproxil fumarate
- Encorafenib
- Enflurane
- Entrectinib
- Eribulin
- Escitalopram
- Ezogabine
- Fingolimod
- Flecainide
- Fluconazole
- Fluoxetine
- Fluoxetine; Olanzapine
- Fluphenazine
- Fluticasone; Salmeterol
- Fluticasone; Umeclidinium; Vilanterol
- Fluticasone; Vilanterol
- Fluvoxamine
- Formoterol
- Formoterol; Mometasone
- Foscarnet
- Gemifloxacin
- Gemtuzumab Ozogamicin
- Gilteritinib
- Glasdegib
- Glycopyrrolate; Formoterol
- Goserelin
- Granisetron
- Halogenated Anesthetics
- Haloperidol
- Halothane
- Histrelin
- Hydroxychloroquine
- Hydroxyzine
- Ibutilide
- Iloperidone
- Imipramine
- Indacaterol
- Indacaterol; Glycopyrrolate
- Inotuzumab Ozogamicin
- Isoflurane
- Itraconazole
- Ivosidenib
- Ketoconazole
- Lapatinib
- Lefamulin
- Lenvatinib
- Leuprolide
- Leuprolide; Norethindrone
- Levalbuterol
- Levofloxacin
- Lithium
- Lofexidine
- Long-acting beta-agonists
- Loperamide
- Loperamide; Simethicone
- Lopinavir; Ritonavir
- Macimorelin
- Maprotiline
- Mefloquine
- Meperidine; Promethazine
- Metaproterenol
- Methadone

- Metronidazole
- Midostaurin
- Mifepristone
- Mirtazapine
- Moxifloxacin
- Nilotinib
- Nortriptyline
- Octreotide
- Ofloxacin
- Olanzapine
- Olodaterol
- Ondansetron
- Osilodrostat
- Osimertinib
- Oxaliplatin
- Paliperidone
- Panobinostat
- Pasireotide
- Pazopanib
- Pentamidine
- Perphenazine
- Perphenazine; Amitriptyline
- Phenylephrine; Promethazine
- Pimavanserin
- Pirbuterol
- Pitolisant
- Posaconazole
- Primaquine
- Procainamide
- Prochlorperazine
- Promethazine
- Propafenone
- Protriptyline
- Quetiapine
- Quinidine
- Quinine
- Ranolazine
- Ribociclib
- Ribociclib; Letrozole
- Rilpivirine
- Risperidone
- Romidepsin
- Salmeterol
- Saquinavir
- Sertraline
- Sevoflurane
- Short-acting beta-agonists
- Siponimod
- Sodium picosulfate; Magnesium oxide; Anhydrous citric acid
- Solifenacin
- Sorafenib
- Sotalol
- Sunitinib
- Tacrolimus
- Tamoxifen
- Telavancin
- Telithromycin
- Terbutaline
- Tetrabenazine
- Tiotropium; Olodaterol
- Tolterodine
- Toremifene
- Trazodone
- Tricyclic antidepressants
- Trifluoperazine
- Trimipramine
- Triptorelin
- Umeclidinium; Vilanterol
- Vandetanib
- Vardenafil
- Vemurafenib
- Venlafaxine
- Voriconazole
- Vorinostat
- Ziprasidone

Level 3 (Moderate)

- Aluminum Hydroxide
- Aluminum Hydroxide; Magnesium Carbonate
- Aluminum Hydroxide; Magnesium Hydroxide
- Aluminum Hydroxide; Magnesium Hydroxide; Simethicone
- Aluminum Hydroxide; Magnesium Trisilicate
- Aspirin, ASA; Pravastatin
- Calcium Carbonate; Magnesium Hydroxide
- Colchicine
- Colchicine; Probenecid
- Conjugated Estrogens; Bazedoxifene
- Cyclosporine
- Dienogest; Estradiol valerate
- Digoxin
- Drospirenone
- Drospirenone; Estradiol
- Drospirenone; Ethinyl Estradiol
- Drospirenone; Ethinyl Estradiol; Levomefolate
- Estradiol; Levonorgestrel
- Estradiol; Norethindrone
- Estradiol; Norgestimate
- Ethinyl Estradiol
- Ethinyl Estradiol; Desogestrel
- Ethinyl Estradiol; Ethynodiol Diacetate
- Ethinyl Estradiol; Etonogestrel
- Ethinyl Estradiol; Levonorgestrel
- Ethinyl Estradiol; Levonorgestrel; Ferrous bisglycinate
- Ethinyl Estradiol; Levonorgestrel; Folic Acid; Levomefolate

- Ethinyl Estradiol; Norelgestromin
- Ethinyl Estradiol; Norethindrone
- Ethinyl Estradiol; Norethindrone Acetate
- Ethinyl Estradiol; Norethindrone Acetate; Ferrous fumarate
- Ethinyl Estradiol; Norethindrone; Ferrous fumarate
- Ethinyl Estradiol; Norgestimate
- Ethinyl Estradiol; Norgestrel
- Levonorgestrel
- Magnesium Hydroxide
- Mestranol; Norethindrone
- Nelfinavir
- Norethindrone
- Norgestrel
- Oral Contraceptives
- Pravastatin
- Segesterone Acetate; Ethinyl Estradiol
- Talazoparib
- Warfarin

Level 4 (Minor)

- Belladonna Alkaloids; Ergotamine; Phenobarbital
- Caffeine; Ergotamine
- Dihydroergotamine
- Ergotamine
- Fosphenytoin
- Phenytoin

Aclidinium; Formoterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Albuterol: (Major) Avoid coadministration of azithromycin with short-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28318] [28855] [33925] [43974] [65157] [65170]

Albuterol; Ipratropium: (Major) Avoid coadministration of azithromycin with short-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28318] [28855] [33925] [43974] [65157] [65170]

Alfuzosin: (Major) Avoid coadministration of azithromycin with alfuzosin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Alfuzosin may prolong the QT interval in a dose-dependent manner. [28261] [28855] [43974] [65157] [65170]

Aluminum Hydroxide: (Moderate) Antacids containing aluminum salts and/or magnesium salts can decrease the oral absorption of immediate-release azithromycin, resulting in lower peak plasma concentrations. If antacids must be

taken, stagger the administration of the antacid and azithromycin. The extended-release suspension may be taken without regard to antacids containing magnesium hydroxide and/or aluminum hydroxide. [28855] [34473] [43975]

Aluminum Hydroxide; Magnesium Carbonate: (Moderate) Antacids containing aluminum salts and/or magnesium salts can decrease the oral absorption of immediate-release azithromycin, resulting in lower peak plasma concentrations. If antacids must be taken, stagger the administration of the antacid and azithromycin. The extended-release suspension may be taken without regard to antacids containing magnesium hydroxide and/or aluminum hydroxide. [28855] [34473] [43975]

Aluminum Hydroxide; Magnesium Hydroxide: (Moderate) Antacids containing aluminum salts and/or magnesium salts can decrease the oral absorption of immediate-release azithromycin, resulting in lower peak plasma concentrations. If antacids must be taken, stagger the administration of the antacid and azithromycin. The extended-release suspension may be taken without regard to antacids containing magnesium hydroxide and/or aluminum hydroxide. [28855] [34473] [43975]

Aluminum Hydroxide; Magnesium Hydroxide; Simethicone: (Moderate) Antacids containing aluminum salts and/or magnesium salts can decrease the oral absorption of immediate-release azithromycin, resulting in lower peak plasma concentrations. If antacids must be taken, stagger the administration of the antacid and azithromycin. The extended-release suspension may be taken without regard to antacids containing magnesium hydroxide and/or aluminum hydroxide. [28855] [34473] [43975]

Aluminum Hydroxide; Magnesium Trisilicate: (Moderate) Antacids containing aluminum salts and/or magnesium salts can decrease the oral absorption of immediate-release azithromycin, resulting in lower peak plasma concentrations. If antacids must be taken, stagger the administration of the antacid and azithromycin. The extended-release suspension may be taken without regard to antacids containing magnesium hydroxide and/or aluminum hydroxide. [28855] [34473] [43975]

Amiodarone: (Major) Avoid coadministration of amiodarone and azithromycin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. Amiodarone, a Class III antiarrhythmic agent, is associated with a well-established risk of QT prolongation and torsade de pointes (TdP). Although the frequency of TdP is less with amiodarone than with other Class III agents, amiodarone is still associated with a risk of TdP. Due to the extremely long half-life of amiodarone, a drug interaction is possible for days to weeks after discontinuation of amiodarone. Reports of QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QT prolongation was reported in a 68-year old woman receiving azithromycin and amiodarone. The patient had a history of stable congestive heart failure and a posterior communicating artery aneurysm. She was receiving amiodarone (200 mg/day) for over a year for paroxysmal atrial fibrillation. Additional medications included furosemide, enalapril, and aspirin. A regular sinus rhythm with normal P-R, QRST, and QTc intervals was noted prior to initiation of azithromycin therapy. Therapy with azithromycin was started at 500 mg PO on day 1, followed by 250 mg PO once daily for 4 days. Sinus bradycardia with marked QT prolongation and increased QT dispersion were noted on day 3 of treatment. Azithromycin was discontinued; QT and QTc intervals and QT dispersion returned to baseline in 4 days. Hypokalemia or hypomagnesemia were not noted in the patient and the amiodarone dose remained consistent at 200 mg/day. [28224] [28432] [28457] [28855] [43974] [65157] [65170]

Amitriptyline: (Major) Avoid coadministration of azithromycin with tricyclic antidepressants (TCAs) due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TCAs share pharmacologic properties similar to the Class IA antiarrhythmic agents and may prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). [28225] [28415] [28416] [28855] [43974] [65157] [65170]

Amitriptyline; Chlordiazepoxide: (Major) Avoid coadministration of azithromycin with tricyclic antidepressants (TCAs) due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously

reported during azithromycin postmarketing surveillance. TCAs share pharmacologic properties similar to the Class IA antiarrhythmic agents and may prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). [28225] [28415] [28416] [28855] [43974] [65157] [65170]

Anagrelide: (Major) Avoid coadministration of azithromycin with anagrelide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TdP and ventricular tachycardia have been reported with anagrelide. In addition, dose-related increases in mean QTc and heart rate were observed in healthy subjects. [28855] [30163] [43974] [65157] [65170]

Apomorphine: (Major) Avoid coadministration of azithromycin with apomorphine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Dose-related QTc prolongation is associated with therapeutic apomorphine exposure. [28661] [28855] [43974] [59321] [65157] [65170]

Arformoterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Aripiprazole: (Major) Avoid coadministration of azithromycin with aripiprazole due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QT prolongation has occurred during therapeutic use of aripiprazole and following overdose. [28855] [42845] [43974] [65157] [65170]

Arsenic Trioxide: (Major) Avoid coadministration of azithromycin with arsenic trioxide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TdP, QT interval prolongation, and complete atrioventricular block have been reported with arsenic trioxide use. [28226] [28855] [43974] [65157] [65170]

Artemether; Lumefantrine: (Major) Avoid coadministration of azithromycin with artemether; lumefantrine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Artemether; lumefantrine is associated with prolongation of the QT interval. [28432] [28855] [35401] [43974] [65157] [65170]

Asenapine: (Major) Avoid coadministration of azithromycin with asenapine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Asenapine has been associated with QT prolongation. [28432] [28855] [36343] [43974] [65157] [65170]

Aspirin, ASA; Pravastatin: (Moderate) Azithromycin has the potential to increase pravastatin exposure when used concomitantly. Coadminister pravastatin and azithromycin cautiously due to a potential increased risk of myopathies. [45507]

Atomoxetine: (Major) Avoid coadministration of azithromycin with atomoxetine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QT prolongation has occurred during therapeutic use of atomoxetine and following overdose. [28405] [28855] [43974] [59321] [65157] [65170]

Bedaquiline: (Major) Avoid coadministration of azithromycin with bedaquiline due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. Discontinue bedaquiline if evidence of serious ventricular arrhythmia or QTcF interval greater than 500 ms. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Bedaquiline prolongs the QT interval. [28855] [34329] [43974] [52746] [65157] [65170]

Belladonna Alkaloids; Ergotamine; Phenobarbital: (Minor) Carefully monitor patients when azithromycin and ergotamine are used concomitantly. Pharmacokinetic and/or pharmacodynamic interactions with ergotamine have been observed with other macrolides. [28858] [34473]

Bismuth Subcitrate Potassium; Metronidazole; Tetracycline: (Major) Avoid coadministration of azithromycin with metronidazole due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Potential QT prolongation has been reported in limited case reports with metronidazole. [28855] [43974] [57377] [57378] [65157] [65170]

Bismuth Subsalicylate; Metronidazole; Tetracycline: (Major) Avoid coadministration of azithromycin with metronidazole due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Potential QT prolongation has been reported in limited case reports with metronidazole. [28855] [43974] [57377] [57378] [65157] [65170]

Budesonide; Formoterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Buprenorphine: (Major) Avoid coadministration of azithromycin with buprenorphine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Buprenorphine has been associated with QT prolongation and has a possible risk of TdP. [28855] [41235] [43974] [60270] [65157] [65170]

Buprenorphine; Naloxone: (Major) Avoid coadministration of azithromycin with buprenorphine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Buprenorphine has been associated with QT prolongation and has a possible risk of TdP. [28855] [41235] [43974] [60270] [65157] [65170]

Caffeine; Ergotamine: (Minor) Carefully monitor patients when azithromycin and ergotamine are used concomitantly. Pharmacokinetic and/or pharmacodynamic interactions with ergotamine have been observed with other macrolides.

[28858] [34473]

Calcium Carbonate; Magnesium Hydroxide: (Moderate) Antacids containing aluminum salts and/or magnesium salts can decrease the oral absorption of immediate-release azithromycin, resulting in lower peak plasma concentrations. If antacids must be taken, stagger the administration of the antacid and azithromycin. The extended-release suspension may be taken without regard to antacids containing magnesium hydroxide and/or aluminum hydroxide. [28855] [34473] [43975]

Ceritinib: (Major) Avoid coadministration of azithromycin with ceritinib if possible due to the risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. An interruption of ceritinib therapy, dose reduction, or discontinuation of therapy may be necessary if QT prolongation occurs. Ceritinib causes concentration-dependent QT prolongation. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. [28225] [43974] [57094] [65157] [65170]

Chloroquine: (Major) Avoid coadministration of chloroquine with azithromycin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances (See Therapeutic Drug Monitoring for recommendations specific to COVID-19). Chloroquine is associated with an increased risk of QT prolongation and torsade de pointes (TdP); the risk of QT prolongation is increased with higher chloroquine doses. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. [28229] [28230] [28231] [28855] [29758] [43974] [65157] [65170]

Chlorpromazine: (Major) Avoid coadministration of azithromycin with chlorpromazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Chlorpromazine is associated with an established risk of QT prolongation and TdP. [28415] [28416] [28417] [28855] [43065] [43974] [65157] [65170]

Ciprofloxacin: (Major) Avoid coadministration of azithromycin with ciprofloxacin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Rare cases of QT prolongation and TdP have been reported with ciprofloxacin during postmarketing surveillance. [28432] [28457] [28855] [29833] [33144] [33145] [33146] [43411] [43974] [48869] [48871] [65157] [65170]

Cisapride: (Severe) There have been case reports of QT prolongation and torsade de pointes (TdP) with the use of azithromycin in post-marketing reports. Azithromycin is contraindicated with other drugs that have been specifically established that have a causal association with QT prolongation and torsade de pointes, such as cisapride. [28407] [28855] [43974]

Citalopram: (Major) Avoid coadministration of azithromycin with citalopram due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Citalopram causes dose-dependent QT interval prolongation. [28269] [28855] [43974] [65157] [65170]

Clofazimine: (Major) Avoid coadministration of azithromycin with clofazimine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QT prolongation and TdP have been reported in patients receiving clofazimine in combination with QT prolonging medications. [28855] [43974] [63936] [65157] [65170]

Clomipramine: (Major) Avoid coadministration of azithromycin with tricyclic antidepressants (TCAs) due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TCAs share pharmacologic properties similar to the Class IA antiarrhythmic agents and may prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). [28225] [28415] [28416] [28855] [43974] [65157] [65170]

Clozapine: (Major) Avoid coadministration of azithromycin with clozapine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Treatment with clozapine has been associated with QT prolongation, TdP, cardiac arrest, and sudden death. [28262] [28855] [43974] [65157] [65170]

Codeine; Phenylephrine; Promethazine: (Major) Avoid coadministration of azithromycin with promethazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Promethazine is associated with possible risk for QT prolongation. [28225] [28855] [43974] [55578] [65157] [65170]

Codeine; Promethazine: (Major) Avoid coadministration of azithromycin with promethazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Promethazine is associated with possible risk for QT prolongation. [28225] [28855] [43974] [55578] [65157] [65170]

Colchicine: (Moderate) Caution is warranted with the concomitant use of colchicine and azithromycin as increased colchicine concentrations may occur. Monitor for colchicine toxicity. Colchicine accumulation may be greater in patients with renal or hepatic impairment. Coadministration with azithromycin resulted in an increase in colchicine Cmax of 21.6% and an increase in the AUC of 57.1%. [36114]

Colchicine; Probenecid: (Moderate) Caution is warranted with the concomitant use of colchicine and azithromycin as increased colchicine concentrations may occur. Monitor for colchicine toxicity. Colchicine accumulation may be greater in patients with renal or hepatic impairment. Coadministration with azithromycin resulted in an increase in colchicine Cmax of 21.6% and an increase in the AUC of 57.1%. [36114]

Conjugated Estrogens; Bazedoxifene: (Moderate) Coadministration of azithromycin and bazedoxifene increased the Cmax of bazedoxifene by 6% and decreased AUC of bazedoxifene by 15%. The clinical effect of these changes is not described. [56074]

Crizotinib: (Major) Avoid coadministration of crizotinib with azithromycin due to the risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. An interruption of therapy, dose reduction, or discontinuation of therapy may be necessary for crizotinib if QT prolongation occurs. Crizotinib has been associated with concentration-dependent QT prolongation. Prolongation of the QT interval and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. [28855] [43974] [45458] [65157] [65170]

Cyclosporine: (Moderate) Caution is warranted with the concomitant use of azithromycin and cyclosporine as increased cyclosporine concentrations may occur. Dose adjustment of cyclosporine may be necessary; monitor cyclosporine serum concentrations during use with azithromycin and after discontinuation of azithromycin. [28404]

Dasatinib: (Major) Avoid coadministration of azithromycin with dasatinib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte

imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. In vitro studies have shown that dasatinib has the potential to prolong cardiac ventricular repolarization (prolong QT interval). [28855] [32387] [43974] [65157] [65170]

Degarelix: (Major) Avoid coadministration of azithromycin with degarelix due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Androgen deprivation therapy (i.e., degarelix) may prolong the QT/QTc interval. [28855] [43974] [46869] [65157] [65170]

Desflurane: (Major) Avoid coadministration of azithromycin with halogenated anesthetics due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Halogenated anesthetics can prolong the QT interval. [28458] [28855] [43974] [65157] [65170]

Desipramine: (Major) Avoid coadministration of azithromycin with tricyclic antidepressants (TCAs) due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TCAs share pharmacologic properties similar to the Class IA antiarrhythmic agents and may prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). [28225] [28415] [28416] [28855] [43974] [65157] [65170]

Deutetrabenazine: (Major) Avoid coadministration of azithromycin with deutetrabenazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. For patients taking a deutetrabenazine dosage more than 24 mg/day with azithromycin, assess the QTc interval before and after increasing the dosage of either medication. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Clinically relevant QTc prolongation may occur with deutetrabenazine. [28855] [43974] [61845] [65157] [65170]

Dextromethorphan; Promethazine: (Major) Avoid coadministration of azithromycin with promethazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Promethazine is associated with possible risk for QT prolongation. [28225] [28855] [43974] [55578] [65157] [65170]

Dextromethorphan; Quinidine: (Major) Avoid coadministration of azithromycin with quinidine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Quinidine administration is associated with QT prolongation and TdP. [28855] [42280] [43974] [47357] [65157] [65170]

Dienogest; Estradiol valerate: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that

back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Digoxin: (Moderate) Monitor digoxin concentrations before and during concomitant use of azithromycin and reduce the digoxin dose if necessary. Elevated digoxin concentrations have been observed when azithromycin has been coadministered with digoxin. [28272] [29743]

Dihydroergotamine: (Minor) Carefully monitor patients when azithromycin and dihydroergotamine are used concomitantly. Pharmacokinetic and/or pharmacodynamic interactions with dihydroergotamine have been observed with other macrolides. [28858] [34473]

Disopyramide: (Major) Avoid coadministration of azithromycin with disopyramide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Disopyramide is associated with QT prolongation and TdP. [28228] [28855] [43974] [65157] [65170]

Dofetilide: (Major) Avoid coadministration of azithromycin with dofetilide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Dofetilide, a Class III antiarrhythmic agent, is associated with a well-established risk of QT prolongation and TdP. [28221] [28432] [28457] [28855] [43974] [65157] [65170]

Dolasetron: (Major) Avoid coadministration of azithromycin with dolasetron due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Dolasetron has been associated with a dose-dependent prolongation in the QT, PR, and QRS intervals on an electrocardiogram. [28855] [42844] [43974] [65157] [65170]

Dolutegravir; Rilpivirine: (Major) Avoid coadministration of azithromycin with rilpivirine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Supratherapeutic doses of rilpivirine (75 to 300 mg/day) have caused QT prolongation. [28855] [43974] [44376] [65157] [65170]

Donepezil: (Major) Avoid coadministration of azithromycin with donepezil due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Case reports indicate that QT prolongation and TdP can occur during donepezil therapy. [28855] [43974] [59321] [59322] [65157] [65170]

Donepezil; Memantine: (Major) Avoid coadministration of azithromycin with donepezil due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin

postmarketing surveillance. Case reports indicate that QT prolongation and TdP can occur during donepezil therapy. [28855] [43974] [59321] [59322] [65157] [65170]

Doxepin: (Major) Avoid coadministration of azithromycin with tricyclic antidepressants (TCAs) due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TCAs share pharmacologic properties similar to the Class IA antiarrhythmic agents and may prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). [28225] [28415] [28416] [28855] [43974] [65157] [65170]

Dronedarone: (Severe) Coadministration of dronedarone and azithromycin is contraindicated due to the potential for QT prolongation and torsade de pointes (TdP). There have been case reports of QT prolongation and TdP with the use of azithromycin in post-marketing reports. Dronedarone administration is associated with a dose-related increase in the QTc interval. The increase in QTc is approximately 10 milliseconds at doses of 400 mg twice daily (the FDA-approved dose) and up to 25 milliseconds at doses of 1600 mg twice daily. Although there are no studies examining the effects of dronedarone in patients receiving other QT prolonging drugs, coadministration of such drugs may result in additive QT prolongation. [28855] [36101] [43974]

Droperidol: (Major) Avoid coadministration of azithromycin with droperidol due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. Initiate droperidol at a low dose and increase the dose as needed to achieve the desired effect. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Droperidol administration is associated with an established risk for QT prolongation and TdP. Some cases have occurred in patients with no known risk factors for QT prolongation and some cases have been fatal. [28235] [28236] [28237] [28855] [43974] [51289] [65157] [65170]

Drospirenone: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Drospirenone; Estradiol: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that

back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Drospirenone; Ethinyl Estradiol: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Drospirenone; Ethinyl Estradiol; Levomefolate: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Efavirenz: (Major) Avoid coadministration of azithromycin with efavirenz due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QTc prolongation has been observed with the use of efavirenz. [28442] [28855] [43974] [65157] [65170]

Efavirenz; Emtricitabine; Tenofovir: (Major) Avoid coadministration of azithromycin with efavirenz due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QTc prolongation has been observed with the use of efavirenz. [28442] [28855] [43974] [65157] [65170]

Efavirenz; Lamivudine; Tenofovir Disoproxil Fumarate: (Major) Avoid coadministration of azithromycin with efavirenz due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QTc prolongation has been observed with the use of efavirenz. [28442] [28855] [43974] [65157] [65170]

Eliglustat: (Major) Avoid coadministration of azithromycin with eliglustat due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Eliglustat is predicted to cause PR, QRS, and/or QT prolongation at significantly elevated plasma concentrations. [28855] [43974] [57803] [65157] [65170]

Emtricitabine; Rilpivirine; Tenofovir alafenamide: (Major) Avoid coadministration of azithromycin with rilpivirine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Supratherapeutic doses of rilpivirine (75 to 300 mg/day) have caused QT prolongation. [28855] [43974] [44376] [65157] [65170]

Emtricitabine; Rilpivirine; Tenofovir disoproxil fumarate: (Major) Avoid coadministration of azithromycin with rilpivirine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Supratherapeutic doses of rilpivirine (75 to 300 mg/day) have caused QT prolongation. [28855] [43974] [44376] [65157] [65170]

Encorafenib: (Major) Avoid coadministration of azithromycin with encorafenib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. Encorafenib is associated with dose-dependent prolongation of the QT interval. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. [28855] [43974] [61570] [63317] [65157]

Enflurane: (Major) Avoid coadministration of azithromycin with halogenated anesthetics due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Halogenated anesthetics can prolong the QT interval. [28458] [28855] [43974] [65157] [65170]

Entrectinib: (Major) Avoid coadministration of azithromycin with entrectinib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Entrectinib has been associated with QT prolongation. [28855] [43974] [64567] [65157] [65170]

Ergotamine: (Minor) Carefully monitor patients when azithromycin and ergotamine are used concomitantly. Pharmacokinetic and/or pharmacodynamic interactions with ergotamine have been observed with other macrolides.

[28858] [34473]

Eribulin: (Major) Avoid coadministration of azithromycin with eribulin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Eribulin has been associated with QT prolongation. [28855] [42449] [43974] [65157] [65170]

Escitalopram: (Major) Avoid coadministration of azithromycin with escitalopram due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Escitalopram has been associated with a risk of QT prolongation and TdP. [28270] [28855] [43974] [65157] [65170]

Estradiol; Levonorgestrel: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Estradiol; Norethindrone: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Estradiol; Norgestimate: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may

decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Desogestrel: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Ethynodiol Diacetate: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Etonogestrel: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Levonorgestrel: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional

contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Levonorgestrel; Ferrous bisglycinate: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Levonorgestrel; Folic Acid; Levomefolate: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Norelgestromin: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true

incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Norethindrone Acetate: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Norethindrone Acetate; Ferrous fumarate: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Norethindrone: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced

significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Norethindrone; Ferrous fumarate: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Norgestimate: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ethinyl Estradiol; Norgestrel: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were

the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Ezogabine: (Major) Avoid coadministration of azithromycin with ezogabine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Ezogabine has been associated with QT prolongation. [28855] [43974] [44800] [65157] [65170]

Fingolimod: (Major) Avoid coadministration of azithromycin with fingolimod due to the increased risk of QT prolongation. If concomitant use is unavoidable, overnight monitoring with continuous ECG in a medical facility is advised after the first dose of fingolimod; monitor ECG closely throughout therapy, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Fingolimod initiation results in decreased heart rate and may prolong the QT interval. Fingolimod has not been studied in patients treated with drugs that prolong the QT interval, but drugs that prolong the QT interval have been associated with cases of TdP in patients with bradycardia. [28855] [41823] [43974] [65157] [65170]

Flecainide: (Major) Avoid coadministration of azithromycin with flecainide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Flecainide is a Class IC antiarrhythmic and is also associated with a possible risk for QT prolongation and/or TdP; flecainide increases the QT interval, but largely due to prolongation of the QRS interval. Although causality for TdP has not been established for flecainide, patients receiving concurrent drugs which have the potential for QT prolongation, such as azithromycin, may have an increased risk of developing proarrhythmias. [23774] [28752] [28855] [43974] [65157] [65170]

Fluconazole: (Major) Avoid coadministration of azithromycin with fluconazole due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Fluconazole has been associated with QT prolongation and rare cases of TdP. [28674] [28855] [43974] [65157] [65170]

Fluoxetine: (Major) Avoid coadministration of azithromycin with fluoxetine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QT prolongation and TdP have been reported in patients treated with fluoxetine. [28855] [32127] [43974] [65157] [65170]

Fluoxetine; Olanzapine: (Major) Avoid coadministration of azithromycin with fluoxetine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QT prolongation and TdP have been reported in patients treated with fluoxetine. [28855]

[32127] [43974] [65157] [65170] (Major) Avoid coadministration of azithromycin with olanzapine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Limited data, including some case reports, suggest that olanzapine may be associated with a significant prolongation of the QTc interval. [28785] [28855] [32732] [32734] [32745] [32746] [43974] [65157] [65170]

Fluphenazine: (Major) Avoid coadministration of azithromycin with fluphenazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Fluphenazine is associated with a possible risk for QT prolongation. Theoretically, fluphenazine may increase the risk of QT prolongation if coadministered with other drugs that have a risk of QT prolongation. [28514] [28855] [43974] [65157] [65170]

Fluticasone; Salmeterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Fluticasone; Umeclidinium; Vilanterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Fluticasone; Vilanterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Fluvoxamine: (Major) Avoid coadministration of azithromycin with fluvoxamine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QT prolongation and TdP have been reported during fluvoxamine postmarketing use. [28855] [50507] [65157] [65170]

Formoterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin

postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Formoterol; Mometasone: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Foscarnet: (Major) Avoid coadministration of azithromycin with foscarnet due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Both QT prolongation and TdP have been reported during postmarketing use of foscarnet. [28377] [28855] [43974] [65157] [65170]

Fosphenytoin: (Minor) Until more data are available, the manufacturer of azithromycin recommends caution and careful monitoring of patients who receive azithromycin with fosphenytoin. Azithromycin was not implicated in clinical trials with drug interactions with fosphenytoin. However, specific drug interaction studies have not been performed with the combination of azithromycin and fosphenytoin. [28855]

Gemifloxacin: (Major) Avoid coadministration of azithromycin with gemifloxacin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Gemifloxacin may also prolong the QT interval in some patients. The maximal change in the QTc interval occurs approximately 5 to 10 hours following oral administration of gemifloxacin. The likelihood of QTc prolongation may increase with increasing dose of the drug; therefore, the recommended dose should not be exceeded especially in patients with renal or hepatic impairment where the Cmax and AUC are slightly higher. [28419] [28420] [28424] [28855] [43974] [65157] [65170]

Gemtuzumab Ozogamicin: (Major) Avoid coadministration of azithromycin with gemtuzumab due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Although QT interval prolongation has not been reported with gemtuzumab, it has been reported with other drugs that contain calicheamicin. [28855] [43974] [62292] [65157] [65170]

Gilteritinib: (Major) Avoid coadministration of azithromycin with gilteritinib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Gilteritinib has been associated with QT prolongation. [28855] [43974] [63787] [65157] [65170]

Glasdegib: (Major) Avoid coadministration of azithromycin with glasdegib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Glasdegib therapy may result in QT prolongation and ventricular arrhythmias including ventricular fibrillation and ventricular tachycardia. [28855] [43974] [63777] [65157] [65170]

Glycopyrrolate; Formoterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Goserelin: (Major) Avoid coadministration of azithromycin with goserelin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Androgen deprivation therapy may prolong the QT/QTc interval. [28592] [28855] [43974] [65157] [65170]

Granisetron: (Major) Avoid coadministration of azithromycin with granisetron due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Granisetron has been associated with QT prolongation. [28855] [31723] [43974] [65157] [65170]

Halogenated Anesthetics: (Major) Avoid coadministration of azithromycin with halogenated anesthetics due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Halogenated anesthetics can prolong the QT interval. [28458] [28855] [43974] [65157] [65170]

Haloperidol: (Major) Avoid coadministration of azithromycin with haloperidol due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Excessive doses (particularly in the overdose setting) or IV administration of haloperidol may be associated with a higher risk of QT prolongation. [23500] [23779] [28225] [28307] [28415] [28416] [28855] [43974] [65157] [65170]

Halothane: (Major) Avoid coadministration of azithromycin with halogenated anesthetics due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Halogenated anesthetics can prolong the QT interval. [28458] [28855] [43974] [65157] [65170]

Histrelin: (Major) Avoid coadministration of azithromycin with histrelin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Androgen deprivation therapy may prolong the QT/QTc interval. [28855] [30369] [43974] [65157] [65170]

Hydroxychloroquine: (Major) Avoid coadministration of hydroxychloroquine and azithromycin due the risk of additive QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances (See Therapeutic Drug Monitoring for recommendations specific to COVID-19).

Hydroxychloroquine prolongs the QT interval. QT prolongation and torsade de pointe (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. [28855] [41806] [43974] [65157] [65170]

Hydroxyzine: (Major) Avoid coadministration of azithromycin with hydroxyzine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Postmarketing data indicate that hydroxyzine causes QT prolongation and TdP. [28855] [43974] [47129] [65157] [65170]

Ibutilide: (Major) Avoid coadministration of azithromycin with ibutilide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Ibutilide administration can cause QT prolongation and TdP; proarrhythmic events should be anticipated. The potential for proarrhythmic events with ibutilide increases with the coadministration of other drugs that prolong the QT interval. [28855] [41830] [43974] [65157] [65170]

Iloperidone: (Major) Avoid coadministration of azithromycin with iloperidone due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Iloperidone has been associated with QT prolongation. [28855] [36146] [43974] [65157] [65170]

Imipramine: (Major) Avoid coadministration of azithromycin with tricyclic antidepressants (TCAs) due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TCAs share pharmacologic properties similar to the Class IA antiarrhythmic agents and may prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). [28225] [28415] [28416] [28855] [43974] [65157] [65170]

Indacaterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Indacaterol; Glycopyrrolate: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Inotuzumab Ozogamicin: (Major) Avoid coadministration of inotuzumab ozogamicin with azithromycin due to the potential for additive QT interval prolongation and risk of torsade de pointes (TdP). If coadministration is unavoidable, obtain an ECG and serum electrolytes prior to the start of treatment, after treatment initiation, and periodically during treatment. Avoid any non-essential QT prolonging drugs and correct electrolyte imbalances.

Inotuzumab has been associated with QT interval prolongation. QT prolongation and TdP have been spontaneously reported during azithromycin postmarketing surveillance. [28855] [43974] [62245] [65157] [65170]

Isoflurane: (Major) Avoid coadministration of azithromycin with halogenated anesthetics due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Halogenated anesthetics can prolong the QT interval. [28458] [28855] [43974] [65157] [65170]

Itraconazole: (Major) Avoid coadministration of azithromycin with itraconazole due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Itraconazole has been associated with prolongation of the QT interval. [28855] [40233] [43974] [57441] [65157] [65170]

Ivosidenib: (Major) Avoid coadministration of azithromycin with ivosidenib due to an increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. An interruption of therapy and dose reduction of ivosidenib may be necessary if QT prolongation occurs. Prolongation of the QTc interval and ventricular arrhythmias have been reported in patients treated with ivosidenib. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. [28855] [43974] [63368] [65157] [65170]

Ketoconazole: (Major) Avoid coadministration of azithromycin with ketoconazole due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Ketoconazole has been associated with prolongation of the QT interval. [27982] [28855] [43974] [65157] [65170]

Lapatinib: (Major) Avoid coadministration of azithromycin with lapatinib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Lapatinib has been associated with concentration-dependent QT prolongation; ventricular arrhythmias and TdP have been reported in postmarketing experience with lapatinib. [28855] [33192] [43974] [65157] [65170]

Lefamulin: (Major) Avoid coadministration of azithromycin with lefamulin as concurrent use may increase the risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs. and correct electrolyte imbalances. Lefamulin has a concentration dependent QTc prolongation effect. The pharmacodynamic interaction potential to prolong the QT interval of the electrocardiogram between lefamulin and other drugs that effect cardiac conduction is unknown. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. [28855] [43974] [64576] [65157] [65170]

Lenvatinib: (Major) Avoid coadministration of azithromycin with lenvatinib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Prolongation of the QT interval has been reported with lenvatinib therapy. [28855] [43974] [58782] [65157] [65170]

Leuprolide: (Major) Avoid coadministration of azithromycin with leuprolide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte

imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Androgen deprivation therapy may prolong the QT/QTc interval. [28855] [43800] [43974] [65157] [65170]

Leuprolide; Norethindrone: (Major) Avoid coadministration of azithromycin with leuprolide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Androgen deprivation therapy may prolong the QT/QTc interval. [28855] [43800] [43974] [65157] [65170] (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Levalbuterol: (Major) Avoid coadministration of azithromycin with short-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28318] [28855] [33925] [43974] [65157] [65170]

Levofloxacin: (Major) Avoid coadministration of azithromycin with levofloxacin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Levofloxacin has been associated with a risk of QT prolongation and TdP. Although extremely rare, TdP has been reported during postmarketing surveillance of levofloxacin. [28421] [28855] [43974] [65157] [65170]

Levonorgestrel: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma

concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Lithium: (Major) Avoid coadministration of azithromycin with lithium due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Lithium has also been associated with QT prolongation. [28855] [43974] [59809] [59810] [59811] [65157] [65170]

Lofexidine: (Major) Avoid coadministration of azithromycin with lofexidine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Lofexidine prolongs the QT interval. [28855] [43974] [63161] [65157] [65170]

Long-acting beta-agonists: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Loperamide: (Major) Avoid coadministration of azithromycin with loperamide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. At high doses, loperamide has been associated with serious cardiac toxicities, including syncope, ventricular tachycardia, QT prolongation, TdP, and cardiac arrest. [28855] [30106] [43974] [60864] [65157] [65170]

Loperamide; Simethicone: (Major) Avoid coadministration of azithromycin with loperamide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. At high doses, loperamide has been associated with serious cardiac toxicities, including syncope, ventricular tachycardia, QT prolongation, TdP, and cardiac arrest. [28855] [30106] [43974] [60864] [65157] [65170]

Lopinavir; Ritonavir: (Major) Avoid coadministration of azithromycin with lopinavir; ritonavir due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Lopinavir; ritonavir is associated with QT prolongation. [28341] [28855] [43974] [65157] [65170]

Macimorelin: (Major) Avoid coadministration of azithromycin with macimorelin due to the increased risk of QT prolongation and torsade de pointes-type ventricular tachycardia. Sufficient washout time of drugs that are known to

prolong the QT interval prior to administration of macimorelin is recommended. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Treatment with macimorelin has been associated with an increase in the corrected QT (QTc) interval. [28855] [43974] [62723] [65150] [65157] [65170]

Magnesium Hydroxide: (Moderate) Antacids containing aluminum salts and/or magnesium salts can decrease the oral absorption of immediate-release azithromycin, resulting in lower peak plasma concentrations. If antacids must be taken, stagger the administration of the antacid and azithromycin. The extended-release suspension may be taken without regard to antacids containing magnesium hydroxide and/or aluminum hydroxide. [28855] [34473] [43975]

Maprotiline: (Major) Avoid coadministration of azithromycin with maprotiline due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Maprotiline has been reported to prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). Cases of long QT syndrome and TdP tachycardia have been described with maprotiline use, but rarely occur when the drug is used alone in normal prescribed doses and in the absence of other known risk factors for QT prolongation. Limited data are available regarding the safety of maprotiline in combination with other QT-prolonging drugs. [28759] [28855] [43974] [65157] [65170]

Mefloquine: (Major) Avoid coadministration of azithromycin with mefloquine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. There is evidence that the use of halofantrine after mefloquine causes a significant lengthening of the QTc interval. Mefloquine alone has not been reported to cause QT prolongation. [28301] [28855] [43974] [65157] [65170]

Meperidine; Promethazine: (Major) Avoid coadministration of azithromycin with promethazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Promethazine is associated with possible risk for QT prolongation. [28225] [28855] [43974] [55578] [65157] [65170]

Mestranol; Norethindrone: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Metaproterenol: (Major) Avoid coadministration of azithromycin with short-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28318] [28855] [33925] [43974] [65157] [65170]

Methadone: (Major) Avoid coadministration of azithromycin with methadone due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Methadone is considered to be associated with an increased risk for QT prolongation and TdP, especially at higher doses (more than 200 mg/day but averaging approximately 400 mg/day in adult patients). Most cases involve patients being treated for pain with large, multiple daily doses of methadone, although cases have been reported in patients receiving doses commonly used for maintenance treatment of opioid addiction. [28319] [28320] [28321] [28322] [28855] [33136] [43974] [65157] [65170]

Metronidazole: (Major) Avoid coadministration of azithromycin with metronidazole due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Potential QT prolongation has been reported in limited case reports with metronidazole. [28855] [43974] [57377] [57378] [65157] [65170]

Midostaurin: (Major) Avoid coadministration of azithromycin with midostaurin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs. and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QT prolongation was reported in patients who received midostaurin in clinical trials. [28855] [43974] [61906] [65157] [65170]

Mifepristone: (Major) Avoid coadministration of azithromycin with mifepristone due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Mifepristone has been associated with dose-dependent prolongation of the QT interval. [28855] [43974] [48697] [65157] [65170]

Mirtazapine: (Major) Avoid coadministration of azithromycin with mirtazapine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Mirtazapine has been associated with dose-dependent prolongation of the QT interval. TdP has been reported postmarketing, primarily in overdose or in patients with other risk factors for QT prolongation. [28855] [40942] [43974] [65157] [65170]

Moxifloxacin: (Major) Avoid coadministration of azithromycin with moxifloxacin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Quinolones have been associated with a risk of QT prolongation. Although extremely rare, TdP has been reported during postmarketing surveillance of moxifloxacin. These reports generally involved patients with concurrent medical conditions or concomitant medications that may have been contributory. [28423] [28855] [43974] [65157] [65170]

Nelfinavir: (Moderate) Coadministration of nelfinavir and azithromycin results in increased azithromycin concentrations. Dosage adjustments are not necessary, although patients should be monitored for azithromycin related adverse effects such as increased hepatic enzymes and hearing impairment. [28839] [34329]

Nilotinib: (Major) Avoid coadministration of azithromycin with nilotinib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Sudden death and QT prolongation have been reported in patients who received nilotinib therapy. [28855] [43974] [58766] [65157] [65170]

Norethindrone: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Norgestrel: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Nortriptyline: (Major) Avoid coadministration of azithromycin with tricyclic antidepressants (TCAs) due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TCAs share pharmacologic properties similar to the Class IA antiarrhythmic

agents and may prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). [28225] [28415] [28416] [28855] [43974] [65157] [65170]

Octreotide: (Major) Avoid coadministration of azithromycin with octreotide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Arrhythmias, sinus bradycardia, and conduction disturbances have occurred during octreotide therapy. Since bradycardia is a risk factor for development of TdP, the potential occurrence of bradycardia during octreotide administration could theoretically increase the risk of TdP in patients receiving drugs that prolong the QT interval. [28432] [28855] [29113] [30624] [43974] [65157] [65170]

Ofloxacin: (Major) Avoid coadministration of azithromycin with ofloxacin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Quinolones have been associated with a risk of QT prolongation and TdP. Although extremely rare, TdP has been reported during postmarketing surveillance of ofloxacin. These reports generally involved patients with concurrent medical conditions or concomitant medications that may have been contributory. [28855] [30738] [43974] [65157] [65170]

Olanzapine: (Major) Avoid coadministration of azithromycin with olanzapine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Limited data, including some case reports, suggest that olanzapine may be associated with a significant prolongation of the QTc interval. [28785] [28855] [32732] [32734] [32745] [32746] [43974] [65157] [65170]

Olodaterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Ondansetron: (Major) Avoid coadministration of azithromycin with ondansetron due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Ondansetron has been associated with a dose-related increase in the QT interval and postmarketing reports of TdP. [28855] [31266] [32722] [43974] [65157] [65170]

Oral Contraceptives: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at

risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Osilodrostat: (Major) Avoid coadministration of azithromycin with osilodrostat due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Osilodrostat is associated with dose-dependent QT prolongation. [28855] [43974] [65098] [65157] [65170]

Osimertinib: (Major) Avoid coadministration of azithromycin with osimertinib if possible due to the risk of QT prolongation and torsade de pointes (TdP). If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. An interruption of osimertinib therapy with dose reduction or discontinuation may be necessary if QT prolongation occurs. QT prolongation and TdP have been spontaneously reported during azithromycin postmarketing surveillance. Concentration-dependent QTc prolongation occurred during clinical trials of osimertinib. [28855] [43974] [60297] [65157] [65170]

Oxaliplatin: (Major) Avoid coadministration of azithromycin with oxaliplatin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QT prolongation and ventricular arrhythmias including fatal TdP have been reported with oxaliplatin use in postmarketing experience. [28855] [41958] [43974] [65157] [65170]

Paliperidone: (Major) Avoid coadministration of azithromycin with paliperidone due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Paliperidone has been associated with QT prolongation; torsade de pointes and ventricular fibrillation have been reported in the setting of overdose. [28855] [40936] [43974] [65157] [65170]

Panobinostat: (Major) Avoid coadministration of azithromycin with panobinostat due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QT prolongation has been reported with panobinostat. [28855] [43974] [58821] [65157] [65170]

Pasireotide: (Major) Avoid coadministration of azithromycin with pasireotide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. QT prolongation has also occurred with pasireotide at therapeutic and supra-therapeutic doses. [28855] [43974] [52611] [65157] [65170]

Pazopanib: (Major) Avoid coadministration of azithromycin with pazopanib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Pazopanib has been reported to prolong the QT interval. [28855] [37098] [43974] [65157] [65170]

Pentamidine: (Major) Avoid coadministration of azithromycin with pentamidine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Systemic pentamidine has been associated with QT prolongation. [23620] [23778] [28419] [28855] [28879] [43974] [65157] [65170]

Perphenazine: (Major) Avoid coadministration of azithromycin with perphenazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Perphenazine is associated with a possible risk for QT prolongation. Theoretically, perphenazine may increase the risk of QT prolongation if coadministered with other drugs that have a risk of QT prolongation. [28415] [28855] [43974] [65157] [65170]

Perphenazine; Amitriptyline: (Major) Avoid coadministration of azithromycin with perphenazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Perphenazine is associated with a possible risk for QT prolongation. Theoretically, perphenazine may increase the risk of QT prolongation if coadministered with other drugs that have a risk of QT prolongation. [28415] [28855] [43974] [65157] [65170] (Major) Avoid coadministration of azithromycin with tricyclic antidepressants (TCAs) due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TCAs share pharmacologic properties similar to the Class IA antiarrhythmic agents and may prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). [28225] [28415] [28416] [28855] [43974] [65157] [65170]

Phenylephrine; Promethazine: (Major) Avoid coadministration of azithromycin with promethazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Promethazine is associated with possible risk for QT prolongation. [28225] [28855] [43974] [55578] [65157] [65170]

Phenytoin: (Minor) Until more data are available, the manufacturer of azithromycin recommends caution and careful monitoring of patients who receive azithromycin with phenytoin. Azithromycin was not implicated in clinical trials with drug interactions with phenytoin. However, specific drug interaction studies have not been performed with the combination of azithromycin and phenytoin. [28855]

Pimavanserin: (Major) Avoid coadministration of azithromycin with pimavanserin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Pimavanserin prolongs the QT interval. [28855] [43974] [60748] [65157] [65170]

Pimozide: (Severe) Pimozide is associated with a well-established risk of QT prolongation and torsade de pointes (TdP). Because of the potential for TdP, use of macrolide antibiotics with pimozide is contraindicated. [28225] [28855] [43258] [43463] [59321]

Pirbuterol: (Major) Avoid coadministration of azithromycin with short-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to

prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28318] [28855] [33925] [43974] [65157] [65170]

Pitolisant: (Major) Avoid coadministration of azithromycin with pitolisant due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Pitolisant prolongs the QT interval. [28855] [43974] [64562] [65157] [65170]

Posaconazole: (Major) Avoid coadministration of azithromycin with posaconazole due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Posaconazole has been associated with prolongation of the QT interval as well as rare cases of TdP. [28855] [32723] [43974] [65157] [65170]

Pravastatin: (Moderate) Azithromycin has the potential to increase pravastatin exposure when used concomitantly. Coadminister pravastatin and azithromycin cautiously due to a potential increased risk of myopathies. [45507]

Primaquine: (Major) Avoid coadministration of azithromycin with primaquine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Primaquine has the potential for QT interval prolongation. [28855] [41984] [43974] [65157] [65170]

Procainamide: (Major) Avoid coadministration of azithromycin with procainamide due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Procainamide is associated with a well-established risk of QT prolongation and TdP. [28250] [28855] [43974] [65157] [65170]

Prochlorperazine: (Major) Avoid coadministration of azithromycin with prochlorperazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Prochlorperazine is associated with a possible risk for QT prolongation. Theoretically, prochlorperazine may increase the risk of QT prolongation if coadministered with other drugs that have a risk of QT prolongation. [28415] [28855] [43974] [65157] [65170]

Promethazine: (Major) Avoid coadministration of azithromycin with promethazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Promethazine is associated with possible risk for QT prolongation. [28225] [28855] [43974] [55578] [65157] [65170]

Propafenone: (Major) Avoid coadministration of azithromycin with propafenone due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Propafenone is a Class IC antiarrhythmic which increases the QT interval, but largely due to prolongation of the QRS interval. [28287] [28855] [43974] [65157] [65170]

Protriptyline: (Major) Avoid coadministration of azithromycin with tricyclic antidepressants (TCAs) due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct

electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TCAs share pharmacologic properties similar to the Class IA antiarrhythmic agents and may prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). [28225] [28415] [28416] [28855] [43974] [65157] [65170]

Quetiapine: (Major) Avoid coadministration of azithromycin with quetiapine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Limited data, including some case reports, suggest that quetiapine may be associated with a significant prolongation of the QTc interval in rare instances. [28855] [29118] [33068] [33072] [33074] [43974] [65157] [65170]

Quinidine: (Major) Avoid coadministration of azithromycin with quinidine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Quinidine administration is associated with QT prolongation and TdP. [28855] [42280] [43974] [47357] [65157] [65170]

Quinine: (Major) Avoid coadministration of azithromycin with quinine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Quinine has been associated with QT prolongation and rare cases of TdP. [28855] [31403] [43974] [65157] [65170]

Ranolazine: (Major) Avoid coadministration of azithromycin with ranolazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Ranolazine is associated with dose- and plasma concentration-related increases in the QTc interval. Although there are no studies examining the effects of ranolazine in patients receiving other QT prolonging drugs, coadministration of such drugs may result in additive QT prolongation. [28855] [31938] [43974] [65157] [65170]

Ribociclib: (Major) Avoid coadministration of azithromycin with ribociclib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Ribociclib has been shown to prolong the QT interval in a concentration-dependent manner. The ribociclib ECG changes occurred within the first four weeks of treatment and were reversible with dose interruption. [28855] [43974] [61816] [65157] [65170]

Ribociclib; Letrozole: (Major) Avoid coadministration of azithromycin with ribociclib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Ribociclib has been shown to prolong the QT interval in a concentration-dependent manner. The ribociclib ECG changes occurred within the first four weeks of treatment and were reversible with dose interruption. [28855] [43974] [61816] [65157] [65170]

Rilpivirine: (Major) Avoid coadministration of azithromycin with rilpivirine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Supratherapeutic doses of rilpivirine (75 to 300 mg/day) have caused QT prolongation. [28855] [43974] [44376] [65157] [65170]

Risperidone: (Major) Avoid coadministration of azithromycin with risperidone due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Risperidone has been associated with a possible risk for QT prolongation and/or TdP, primarily in the overdose setting. [28225] [28414] [28416] [28855] [43974] [65157] [65170]

Romidepsin: (Major) Avoid coadministration of azithromycin with romidepsin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Romidepsin has been reported to prolong the QT interval. [28855] [37292] [43974] [65157] [65170]

Salmeterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Saquinavir: (Major) Avoid coadministration of azithromycin with saquinavir boosted with ritonavir due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Saquinavir boosted with ritonavir increases the QT interval in a dose-dependent fashion, which may increase the risk for serious arrhythmias such as TdP. [28855] [28995] [43974] [65157] [65170]

Segesterone Acetate; Ethinyl Estradiol: (Moderate) It would be prudent to recommend alternative or additional contraception when oral contraceptives (OCs) are used in conjunction with antibiotics. It was previously thought that antibiotics may decrease the effectiveness of OCs containing estrogens due to stimulation of metabolism or a reduction in enterohepatic circulation via changes in GI flora. One retrospective study reviewed the literature to determine the effects of oral antibiotics on the pharmacokinetics of contraceptive estrogens and progestins, and also examined clinical studies in which the incidence of pregnancy with OCs and antibiotics was reported. It was concluded that the antibiotics ampicillin, ciprofloxacin, clarithromycin, doxycycline, metronidazole, ofloxacin, roxithromycin, temafloxacin, and tetracycline did not alter plasma concentrations of OCs. Antituberculous drugs (e.g., rifampin) were the only agents associated with OC failure and pregnancy. Based on the study results, these authors recommended that back-up contraception may not be necessary if OCs are used reliably during oral antibiotic use. Another review concurred with these data, but noted that individual patients have been identified who experienced significant decreases in plasma concentrations of combined OC components and who appeared to ovulate; the agents most often associated with these changes were rifampin, tetracyclines, and penicillin derivatives. These authors concluded that because females most at risk for OC failure or noncompliance may not be easily identified and the true incidence of such events may be under-reported, and given the serious consequence of unwanted pregnancy, that recommending an additional method of contraception during short-term antibiotic use may be justified. During long-term antibiotic administration, the risk for drug interaction with OCs is less clear, but alternative or additional contraception may be advisable in selected circumstances. Data regarding progestin-only contraceptives or for newer combined contraceptive deliveries (e.g., patches, rings) are not available. [28482] [28509]

Sertraline: (Major) Avoid coadministration of azithromycin with sertraline due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Sertraline's FDA-approved labeling recommends avoiding concomitant use with drugs known to prolong the QTc interval; however, the risk of sertraline-induced QT prolongation is generally considered to

be low in clinical practice. Its effect on QTc interval is minimal (typically less than 5 msec), and the drug has been used safely in patients with cardiac disease (e.g., recent myocardial infarction, unstable angina, chronic heart failure). [28343] [28855] [43974] [64391] [64392] [64394] [64395] [64396] [65157] [65170]

Sevoflurane: (Major) Avoid coadministration of azithromycin with halogenated anesthetics due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Halogenated anesthetics can prolong the QT interval. [28458] [28855] [43974] [65157] [65170]

Short-acting beta-agonists: (Major) Avoid coadministration of azithromycin with short-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28318] [28855] [33925] [43974] [65157] [65170]

Siponimod: (Major) Avoid coadministration of azithromycin with siponimod due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Siponimod therapy prolonged the QT interval at recommended doses in a clinical study. [28855] [43974] [64031] [65157] [65170]

Sodium picosulfate; Magnesium oxide; Anhydrous citric acid: (Major) Prior or concomitant use of antibiotics with sodium picosulfate; magnesium oxide; anhydrous citric acid may reduce efficacy of the bowel preparation as conversion of sodium picosulfate to its active metabolite bis-(p-hydroxy-phenyl)-pyridyl-2-methane (BHPM) is mediated by colonic bacteria. If possible, avoid coadministration. Certain antibiotics (i.e., tetracyclines and quinolones) may chelate with the magnesium in sodium picosulfate; magnesium oxide; anhydrous citric acid solution. Therefore, these antibiotics should be taken at least 2 hours before and not less than 6 hours after the administration of sodium picosulfate; magnesium oxide; anhydrous citric acid solution. [51258]

Solifenacin: (Major) Avoid coadministration of azithromycin with solifenacin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Solifenacin has been associated with dose-dependent prolongation of the QT interval. TdP has been reported with postmarketing use, although causality was not determined. [28855] [30515] [43974] [65157] [65170]

Sorafenib: (Major) Avoid coadministration of azithromycin with sorafenib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. An interruption or discontinuation of sorafenib therapy may be necessary if QT prolongation occurs. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Sorafenib has been associated with QT prolongation. [28855] [31832] [43974] [65157] [65170]

Sotalol: (Major) Avoid coadministration of azithromycin with sotalol due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Sotalol administration is associated with QT prolongation and TdP. Proarrhythmic events should be anticipated after initiation of therapy and after each upward dosage adjustment. [28234] [28855] [43974] [65157] [65170]

Sunitinib: (Major) Avoid coadministration of azithromycin with sunitinib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Sunitinib can cause dose-dependent QT prolongation, which may increase the risk for ventricular arrhythmias, including TdP. [28855] [31970] [43974] [65157] [65170]

Tacrolimus: (Major) Avoid coadministration of azithromycin with tacrolimus due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Tacrolimus may prolong the QT interval and cause TdP. [27353] [27354] [28225] [28855] [43974] [65157] [65170]

Talazoparib: (Moderate) Monitor for an increase in talazoparib-related adverse reactions if coadministration with azithromycin is necessary. In clinical trials, coadministration with azithromycin increased talazoparib exposure by approximately 8%. [63651]

Tamoxifen: (Major) Avoid coadministration of azithromycin with tamoxifen due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Tamoxifen has been reported to prolong the QT interval, usually in overdose or when used in high doses. Rare case reports of QT prolongation have also been described when tamoxifen is used at lower doses. [28855] [43974] [61870] [61871] [61872] [63589] [65157] [65170]

Telavancin: (Major) Avoid coadministration of azithromycin with telavancin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Telavancin has been associated with QT prolongation. [28855] [36615] [43974] [65157] [65170]

Telithromycin: (Major) Avoid coadministration of azithromycin with telithromycin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Telithromycin is also associated with QT prolongation and TdP. [28156] [28855] [43974] [65157] [65170]

Terbutaline: (Major) Avoid coadministration of azithromycin with short-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28318] [28855] [33925] [43974] [65157] [65170]

Tetrabenazine: (Major) Avoid coadministration of azithromycin with tetrabenazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Tetrabenazine causes a small increase in the corrected QT interval (QTc). [28855] [34389] [43974] [65157] [65170]

Thioridazine: (Severe) Coadministration of thioridazine and azithromycin is contraindicated due to an increased risk of QT prolongation. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during

azithromycin postmarketing surveillance. Thioridazine is associated with a well-established risk of QT prolongation and TdP. [28225] [28293] [28855] [43974]

Tiotropium; Olodaterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Tolterodine: (Major) Avoid coadministration of azithromycin with tolterodine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Tolterodine has been associated with dose-dependent prolongation of the QT interval, especially in poor CYP2D6 metabolizers. [28855] [31112] [43974] [65157] [65170]

Toremifene: (Major) Avoid coadministration of azithromycin with toremifene if possible due to the risk of additive QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Toremifene has been shown to prolong the QTc interval in a dose- and concentration-related manner. [28822] [28855] [43974] [65157] [65170]

Trazodone: (Major) Avoid coadministration of azithromycin with trazodone due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Trazodone can prolong the QT/QTc interval at therapeutic doses. In addition, there are postmarketing reports of TdP. [28855] [43974] [65157] [65170]

Tricyclic antidepressants: (Major) Avoid coadministration of azithromycin with tricyclic antidepressants (TCAs) due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TCAs share pharmacologic properties similar to the Class IA antiarrhythmic agents and may prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). [28225] [28415] [28416] [28855] [43974] [65157] [65170]

Trifluoperazine: (Major) Avoid coadministration of azithromycin with trifluoperazine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Trifluoperazine is associated with a possible risk for QT prolongation. Theoretically, trifluoperazine may increase the risk of QT prolongation if coadministered with other drugs that have a risk of QT prolongation. [28415] [28855] [43974] [65157] [65170]

Trimipramine: (Major) Avoid coadministration of azithromycin with tricyclic antidepressants (TCAs) due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. TCAs share pharmacologic properties similar to the Class IA antiarrhythmic agents and may prolong the QT interval, particularly in overdose or with higher-dose prescription therapy (elevated serum concentrations). [28225] [28415] [28416] [28855] [43974] [65157] [65170]

Triptorelin: (Major) Avoid coadministration of azithromycin with triptorelin due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Androgen deprivation therapy may prolong the QT/QTc interval. [28855] [43974] [45411] [65157] [65170]

Umeclidinium; Vilanterol: (Major) Avoid coadministration of azithromycin with long-acting beta-agonists due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Beta-agonists may be associated with adverse cardiovascular effects including QT interval prolongation, usually at higher doses, when associated with hypokalemia, or when used with other drugs known to prolong the QT interval. This risk may be more clinically significant with long-acting beta-agonists as compared to short-acting beta-agonists. [28467] [28855] [32901] [41231] [43974] [44979] [54633] [57710] [65157] [65170]

Vandetanib: (Major) Avoid coadministration of azithromycin with vandetanib due to an increased risk of QT prolongation and torsade de pointes (TdP). If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. An interruption of vandetanib therapy or dose reduction may be necessary for QT prolongation. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Vandetanib can prolong the QT interval in a concentration-dependent manner; TdP and sudden death have been reported in patients receiving vandetanib. [28855] [43901] [43974] [65157] [65170]

Vardenafil: (Major) Avoid coadministration of azithromycin with vardenafil due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Both therapeutic and supratherapeutic doses of vardenafil produce an increase in QTc interval. [28216] [28855] [41124] [43974] [65157] [65170]

Vemurafenib: (Major) Avoid coadministration of azithromycin with vemurafenib due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Vemurafenib has been associated with QT prolongation. [28855] [43974] [45335] [65157] [65170]

Venlafaxine: (Major) Avoid coadministration of azithromycin with venlafaxine due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Venlafaxine administration is associated with a possible risk of QT prolongation; TdP has reported with postmarketing use. [28855] [33715] [43974] [65157] [65170]

Voriconazole: (Major) Avoid coadministration of azithromycin with voriconazole due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Voriconazole has been associated with prolongation of the QT interval and rare cases of arrhythmias, including TdP. [28158] [28855] [43974] [65157] [65170]

Vorinostat: (Major) Avoid coadministration of azithromycin with vorinostat due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin

postmarketing surveillance. Vorinostat is associated with a risk of QT prolongation. [28855] [32789] [43974] [65157] [65170]

Warfarin: (Moderate) Carefully monitor the PT/INR in patients who receive warfarin and azithromycin concomitantly. Postmarketing reports suggest that concomitant administration of azithromycin may potentiate the effects of oral warfarin, although the prothrombin time was not affected in the dedicated drug interaction study with azithromycin and warfarin. [23809] [28855]

Ziprasidone: (Major) Avoid coadministration of azithromycin with ziprasidone due to the increased risk of QT prolongation. If use together is necessary, obtain an ECG at baseline to assess initial QT interval and determine frequency of subsequent ECG monitoring, avoid any non-essential QT prolonging drugs, and correct electrolyte imbalances. QT prolongation and torsade de pointes (TdP) have been spontaneously reported during azithromycin postmarketing surveillance. Clinical trial data indicate that ziprasidone causes QT prolongation; there are postmarketing reports of TdP in patients with multiple confounding factors. [28233] [28855] [43974] [65157] [65170]

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Monitoring Parameters

- ECG
- LFTs

IV Compatibility of Azithromycin with:

Legend

C = Compatible
I = Incompatible
⚠ = Results uncertain, variable or dependent on conditions
ND = No Data Available

From Trissel's 2™ Clinical Pharmaceutics Database

	Admixture	Syringe	Y-Site Administration	For Dilution
Acyclovir sodium	ND	ND	C	ND
Alatrofloxacin mesylate	ND	ND	C	ND
Alemtuzumab	ND	ND	C	ND
Alfentanil hydrochloride	ND	ND	C	ND
Amikacin sulfate	ND	ND	⚠	ND
Aminocaproic acid	ND	ND	C	ND
Aminophylline	ND	ND	C	ND
Amiodarone hydrochloride	ND	ND	I	ND
Amphotericin B conventional colloidal	ND	ND	I	ND
Amphotericin B lipid complex (Abelcet)	ND	ND	C	ND
Amphotericin B liposome (AmBisome)	ND	ND	C	ND
Ampicillin sodium	ND	ND	C	ND
Ampicillin sodium-sulbactam sodium	ND	ND	C	ND
Anidulafungin	ND	ND	C	ND
Argatroban	ND	ND	C	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Arsenic trioxide	ND	ND	C	ND
Asparaginase	ND	ND	C	ND
Atenolol	ND	ND	C	ND
Atracurium besylate	ND	ND	C	ND
Aztreonam	ND	ND	⚠	ND
Bivalirudin	ND	ND	C	ND
Bleomycin sulfate	ND	ND	C	ND
Bumetanide	ND	ND	C	ND
Buprenorphine hydrochloride	ND	ND	C	ND
Butorphanol tartrate	ND	ND	C	ND
Calcium chloride	ND	ND	C	ND
Calcium gluconate	ND	ND	C	ND
Cangrelor	ND	ND	C	ND
Capreomycin sulfate	ND	ND	C	ND

	Admixture	Syringe	Y-Site Administration	For Dilution
Carboplatin	ND	ND	C	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Carmustine	ND	ND	C	ND
Caspofungin acetate	ND	ND	⚠	ND
Cefazolin sodium	ND	ND	C	ND
Cefepime hydrochloride	ND	ND	C	ND
Cefoperazone	ND	ND	C	ND
Cefotaxime	ND	ND	⚠	ND
Cefotetan disodium	ND	ND	C	ND
Cefoxitin	ND	ND	C	ND
Ceftaroline fosamil	ND	ND	C	ND
Ceftazidime	ND	ND	⚠	ND
Ceftazidime (L-arginine)	ND	ND	C	ND
Ceftizoxime	ND	ND	C	ND
Ceftobiprole medocaril	ND	ND	C	ND
Ceftolozane; Tazobactam	ND	ND	C	ND
Ceftriaxone sodium	ND	ND	⚠	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Cefuroxime	ND	ND	⚠	ND
Chlorpromazine hydrochloride	ND	ND	I	ND
Cimetidine hydrochloride	ND	ND	C	ND
Ciprofloxacin	I	ND	⚠	ND
Cisatracurium besylate	ND	ND	C	ND
Cisplatin	ND	ND	C	ND
Clindamycin phosphate	ND	ND	⚠	ND
Cloxacillin sodium	ND	ND	I	ND
Cyclophosphamide	ND	ND	C	ND
Cyclosporine	ND	ND	C	ND
Cytarabine	ND	ND	C	ND
D5W-Dextrose 5%	ND	ND	ND	C
Dacarbazine	ND	ND	C	ND
Daptomycin	C	ND	C	ND
Daunorubicin citrate liposome	ND	ND	C	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Dexamethasone sodium phosphate	ND	ND	C	ND
Dexmedetomidine hydrochloride	ND	ND	C	ND
Dexrazoxane	ND	ND	C	ND

	Admixture	Syringe	Y-Site Administration	For Dilution
Dextrose 5% in lactated Ringer's	ND	ND	ND	C
Dextrose 5% in sodium chloride 0.3%	ND	ND	ND	C
Dextrose 5% in sodium chloride 0.45%	ND	ND	ND	C
Diazepam	ND	ND	I	ND
Digoxin	ND	ND	C	ND
Diltiazem hydrochloride	ND	ND	C	ND
Diphenhydramine hydrochloride	ND	ND	C	ND
Dobutamine hydrochloride	ND	ND	C	ND
Docetaxel	ND	ND	C	ND
Dolasetron mesylate	ND	ND	U	ND
Dopamine hydrochloride	ND	ND	C	ND
Doripenem	ND	ND	C	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Doxacurium chloride	ND	ND	C	ND
Doxorubicin hydrochloride	ND	ND	I	ND
Doxorubicin hydrochloride liposomal	ND	ND	C	ND
Doxycycline hyclate	ND	ND	C	ND
Droperidol	ND	ND	C	ND
Enalaprilat	ND	ND	C	ND
Ephedrine hydrochloride	ND	ND	C	ND
Epinephrine hydrochloride	ND	ND	C	ND
Epirubicin hydrochloride	ND	ND	I	ND
Eptifibatide	ND	ND	C	ND
Ertapenem sodium	ND	ND	C	ND
Esmolol hydrochloride	ND	ND	C	ND
Etoposide	ND	ND	C	ND
Etoposide phosphate	ND	ND	C	ND
Famotidine	ND	ND	U	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Fenoldopam mesylate	ND	ND	C	ND
Fentanyl citrate	ND	ND	U	ND
Fluconazole	ND	ND	C	ND
Fluorouracil	ND	ND	C	ND
Foscarnet sodium	ND	ND	C	ND
Fosphenytoin sodium	ND	ND	C	ND
Furosemide	ND	ND	U	ND
Gallium nitrate	ND	ND	C	ND

	Admixture	Syringe	Y-Site Administration	For Dilution
Ganciclovir sodium	ND	ND	C	ND
Garenoxacin Mesylate	ND	ND	I	ND
Gatifloxacin	ND	ND	C	ND
Gemcitabine hydrochloride	ND	ND	C	ND
Gemtuzumab ozogamicin	ND	ND	I	ND
Gentamicin sulfate	ND	ND	U	ND
Granisetron hydrochloride	ND	ND	C	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Haloperidol lactate	ND	ND	C	ND
Heparin sodium	ND	ND	C	ND
Hetastarch 6% (Hextend)	ND	ND	C	ND
Hydrocortisone sodium phosphate	ND	ND	C	ND
Hydrocortisone sodium succinate	ND	ND	C	ND
Hydromorphone hydrochloride	ND	ND	C	ND
Hydroxyzine hydrochloride	ND	ND	C	ND
Idarubicin hydrochloride	ND	ND	C	ND
Ifosfamide	ND	ND	C	ND
Imipenem-cilastatin sodium	ND	ND	U	ND
Inamrinone lactate	ND	ND	C	ND
Irinotecan hydrochloride	ND	ND	C	ND
Isavuconazonium Sulfate	ND	ND	U	ND
Isoproterenol hydrochloride	ND	ND	C	ND
Ketorolac tromethamine	ND	ND	U	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Labetalol hydrochloride	ND	ND	C	ND
Lactated Ringer's Injection	ND	ND	ND	C
Lepirudin	ND	ND	C	ND
Leucovorin calcium	ND	ND	C	ND
Levofloxacin	ND	ND	U	ND
Levorphanol tartrate	ND	ND	C	ND
Lidocaine hydrochloride	ND	ND	C	ND
Linezolid	ND	ND	C	ND
Lorazepam	ND	ND	C	ND
Magnesium sulfate	ND	ND	C	ND
Mannitol	ND	ND	C	ND
Mechlorethamine hydrochloride	ND	ND	C	ND
Meperidine hydrochloride	ND	ND	C	ND

	Admixture	Syringe	Y-Site Administration	For Dilution
Meropenem	ND	ND	C	ND
Mesna	ND	ND	C	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Methadone hydrochloride	ND	ND	C	ND
Methohexital sodium	ND	ND	C	ND
Methotrexate sodium	ND	ND	C	ND
Methylprednisolone sodium succinate	ND	ND	C	ND
Metoclopramide hydrochloride	ND	ND	C	ND
Metronidazole	ND	ND	C	ND
Midazolam hydrochloride	ND	ND	I	ND
Milrinone lactate	ND	ND	C	ND
Minocycline hydrochloride	ND	ND	C	ND
Mitoxantrone hydrochloride	ND	ND	I	ND
Mivacurium chloride	ND	ND	C	ND
Morphine sulfate	ND	ND	⚠	ND
Mycophenolate mofetil hydrochloride	ND	ND	I	ND
Nalbuphine hydrochloride	ND	ND	C	ND
Naloxone hydrochloride	ND	C	C	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Nesiritide	ND	ND	C	ND
Nicardipine hydrochloride	ND	ND	I	ND
Nitroglycerin	ND	ND	C	ND
Nitroprusside sodium	ND	ND	C	ND
Normal saline- Sodium chloride 0.9%	ND	ND	ND	C
Normosol M in dextrose 5%	ND	ND	ND	C
Normosol R in dextrose 5%	ND	ND	ND	C
Octreotide acetate	ND	ND	C	ND
Ofloxacin	ND	ND	C	ND
Ondansetron hydrochloride	ND	ND	C	ND
Ornidazole	C	ND	ND	ND
Oxaliplatin	ND	ND	C	ND
Oxytocin	ND	ND	C	ND
Paclitaxel (solvent/surfactant)	ND	ND	C	ND
Palonosetron hydrochloride	ND	ND	C	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Pamidronate disodium	ND	ND	C	ND
Pancuronium bromide	ND	ND	C	ND

	Admixture	Syringe	Y-Site Administration	For Dilution
Pantoprazole sodium	ND	ND	C	ND
Pemetrexed disodium	ND	ND	C	ND
Pentamidine isethionate	ND	ND	I	ND
Pentobarbital sodium	ND	ND	C	ND
Phenobarbital sodium	ND	ND	C	ND
Phenylephrine hydrochloride	ND	ND	C	ND
Phenytoin sodium	ND	ND	I	ND
Piperacillin sodium	ND	ND	C	ND
Piperacillin sodium-tazobactam sodium	ND	ND	⚠	ND
Plazomicin	ND	ND	C	ND
Potassium acetate	ND	ND	C	ND
Potassium chloride	C	ND	⚠	ND
Potassium phosphates	ND	ND	C	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Procainamide hydrochloride	ND	ND	C	ND
Prochlorperazine edisylate	ND	ND	C	ND
Promethazine hydrochloride	ND	ND	C	ND
Propranolol hydrochloride	ND	ND	C	ND
Quinupristin-Dalfopristin	ND	ND	I	ND
Ranitidine hydrochloride	ND	ND	C	ND
Remifentanil hydrochloride	ND	ND	C	ND
Rocuronium bromide	ND	ND	C	ND
Salbutamol	ND	I	ND	ND
Sodium acetate	ND	ND	C	ND
Sodium bicarbonate	ND	ND	C	ND
Sodium chloride 0.45%	ND	ND	ND	C
Sodium phosphates	ND	ND	C	ND
Succinylcholine chloride	ND	ND	C	ND
Sufentanil citrate	ND	ND	C	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Sulfamethoxazole-trimethoprim	ND	ND	C	ND
Tacrolimus	ND	ND	C	ND
Tedizolid phosphate	ND	ND	C	ND
Telavancin hydrochloride	ND	ND	C	ND
Teniposide	ND	ND	C	ND
Thiopental sodium	ND	ND	I	ND
Thiotepa	ND	ND	C	ND

	Admixture	Syringe	Y-Site Administration	For Dilution
Ticarcillin disodium	ND	ND	C	ND
Ticarcillin disodium-clavulanate potassium	ND	ND	I	ND
Tigecycline	ND	ND	C	ND
Tirofiban hydrochloride	ND	ND	C	ND
Tobramycin sulfate	ND	ND	I	ND
TPN (2-in-1) Total Parenteral Nutrition Admixture	ND	ND	C	ND
Trimethobenzamide hydrochloride	ND	ND	C	ND
Vancomycin hydrochloride	ND	ND	C	ND
	Admixture	Syringe	Y-Site Administration	For Dilution
Vasopressin	ND	ND	C	ND
Vecuronium bromide	ND	ND	C	ND
Verapamil hydrochloride	ND	ND	C	ND
VinCRIStine sulfate	ND	ND	C	ND
Voriconazole	ND	ND	C	ND
Zidovudine	ND	ND	C	ND
Zoledronic acid	ND	ND	C	ND

US Drug Names

- Azasite
- Zithromax
- Zithromax Tri-Pak
- Zithromax Z-Pak
- Zmax

Global Drug names

Argentina

- Arzomicin - (Takeda)
- Azibiotic - (Baliarda)
- Azitral - (Sanitas)
- Azitrogal - (Sant Gall)
- Azitrolabsa - (Labsa)
- Azitrolan - (Lanpharm)
- Azitrona - (Klonal)
- Azitrox - (Lepetit)
- Cetaxim - (TRB)
- Clearsing - (Duncan)
- Cronopen - (Elea)
- Doyle - (Raffo)
- Fabodrox - (Fabop)
- Fabramicina - (Fabra)

- Finatres - (Finadiet)
- Macromax - (Investi)
- Misultina - (Bernabo)
- Naxocina - (AstraZeneca)
- Neblic - (Lazar)
- Nifostin - (Penn)
- Novozitron - (Laboratorio Internacional)
- Orobiotic - (Fortbenton)
- Sitrox - (Biotenk)
- Sumir - (Craveri)
- Talcilina - (Ronnet)
- Tanezox - (Microsules)
- Triamid - (Beta)
- Tritab - (Sidus)
- Tromiatlas - (Atlas)
- Vectocilina - (Panalab)
- Visag - (Poen)
- Zitromax - (Pfizer)

Australia

- Azith - (Alphapharm)
- Zedd - (Medis)
- Zithromax - (Pfizer)
- Zitrocin - (Pfizer)

Austria

- Azyter - (Thea)
- Zithromax - (Pfizer)

Belgium

- Zitromax - (Pfizer)

Brazil

- Astro - (Eurofarma)
- Atromicin - (Teuto)
- Azalide - (Bunker)
- Azatill - (Prodotti)
- Azi - (Sigma)
- Azidromic - (Royton)
- Azimax - (EMS)
- Azimed - (Cimed)
- Azimix - (Ativus)
- Azinostil - (EMS)
- Azitrax - (Farmoquimica)
- Azitrin - (Delta)
- Azitrocin - (Cibran)
- Azitrogran - (Legrand)
- Azitrolab - (Multilab)
- Azitromed - (Medquimica)
- Azitromicil - (Greenpharma)
- Azitromin - (Farmasa)
- Azitron - (Cifarma)
- Azitronax - (Pharlab)
- Azitrophar - (Pharlab)

- Azitrosol - (Luper)
- Azitroxil - (De Mayo)
- Biozitrom - (Biofarma)
- Clindal - (Merck)
- Clindaz - (Merck)
- Ems-Max - (EMS)
- Mac Azi - (Sigma)
- Mazitron - (Uniao Quimica)
- Novatrex - (Ache)
- Selimax - (Libbs)
- Selimax Pulso - (Libbs)
- Siftromin - (Sinterapico)
- Triazi - (Itaca)
- Tromix - (Ariston)
- Tromizir - (Belfar)
- Trozyman - (IQB)
- Zidimax - (Laboris)
- Zimicina - (Sandoz)
- Zitril - (Cazi)
- Zitromax - (Pfizer)
- Zitromil - (GSK)
- Zitroneo - (Neo Quimica)
- Zolprox - (Globo)

Canada

- Zithromax - (Pfizer)
- Zmax - (Pfizer)
- Z-Pak - (Pfizer)

Chile

- Abacten - (Andromaco)
- Asipral - (Labomed)
- Atizor - (Medipharm)
- Azibay - (Bayer)
- Azimit - (Interpharma)
- Azitrom - (Laboratorios Chile)
- Azydrop - (Andromaco)
- Ricilina - (Recalcine)
- Trex - (Saval)
- Zetamax - (Eurofarma)
- Zithromax - (Pfizer)

China

- A Sai Qi - (Yiqiao)
- Ai Mi Qi - (Mei Luo)
- An Mei Qin - (ZhenYuan)
- Ao Li Ping - (Aoya)
- Ba Qi - (Da Heng)
- Bai Ke De Rui - (Bai Ke)
- Bin Qi - (Qi Li)
- BinQi - (Binhu Shuanghe)
- Bo Kang - (Star)
- Chen Yu - (Lukang Chenxin)
- Feng Da Qi - (Asia Pioneer)

- Fu Qi-Hua Yuan - (Jinhui)
- Fu Rui Xin - (Lai En)
- Fuqixing - (Changzheng-Xinkai)
- Fuxin - (Haixin)
- Jin Nuo - (Fenghuang)
- Jin Pai Qi - (Lijun)
- Jinbo - (TianJin)
- Jun Jie - (Lunan)
- Jun Wei Qing - (Tianlong)
- Kai Qi - (Qianjiang)
- Kang Li Jian - (San Lian)
- Kang Qi - (Shunfeng)
- Ke Lin Da - (Liaoyuan Yadong)
- Ke Yan Li - (Liuan Huayuan)
- Kuai Di - (Hayao)
- Kuai Yu - (LuoXin)
- Li Ke Si - (Lai Mei)
- Li Li Kai - (Haishen Liansheng)
- Li Li Xing - (Haishen Liansheng)
- Li Qi - (Yangtze River)
- Lin Bi - (Double-Crane)
- Lipuqi - (Neptunus)
- Lipuxin - (Neptunus)
- Lizhu Qile - (Livzon)
- Lu Jia Kang - (Kanglong)
- Luo Bei Er - (Yong He)
- Luo Qi - (Aida)
- Luoxin Shoukang - (LuoXin)
- Ming Qi Xin - (Mingxin)
- Na Qi - (Pu Luo Kang Yu)
- Pai Fen - (Wanjie High Tech)
- Pai Fu - (Double-Crane)
- Paiqi - (Lijun)
- Pu He - (Chang Fu Jie Jing)
- Pu Le Qi - (Shyndec)
- Pu Yang - (Xin Ma)
- Qi Gu Mei - (Huang Long)
- Qi Hong - (Hayao)
- Qi Mai Xing - (Yatai)
- Qi Nuo - (Double-Crane)
- Qi Tai - (Jiu Tai)
- Qi Xian - (Shenyang First)
- QiLi - (Zhong Bao)
- Qiyue - (Jiqi Huakang)
- Ru Shuang Qi - (Kangliyuan)
- Rui Qi - (GuoRui)
- Rui Qi Lin - (Qian Long)
- Sai Jin Sha - (Tongde)
- Sai Le Xin - (United Lab)
- Sai Qi - (Dade)
- Sheng Nuo Ling - (Sanhome)
- Shepherd - (Ke Lun)
- Shu Luo Kang - (JiChuan)
- Su Shuang - (GuoGuang)
- Sumamed - (Pliva)
- Tailite - (Taiyang)
- Te Li Xin - (Hui Yin Bi)

- Tong Tai Qi Li - (Yi Kang)
- Tuo Neng - (Haixin)
- TuoQi - (Jinfeng)
- Wei Li Qing - (Qingfeng)
- Wei Lu De - (Jianfeng)
- Wei Zong - (Bikang)
- Weihong - (CSPC)
- Xi Le Xin - (Lukang Chenxin)
- Xi Mei - (C & O)
- Xin Da Kang - (Salubris)
- Xin Pu Rui - (Tianlong)
- Ya Rui - (Yatai)
- Yan Sha - (Xibaishou)
- Yi Nuo Da - (ShiJiaZhuang No 4)
- Yi Ou Qing - (Qilu)
- Yi Song - (De Zhou)
- Yi Xin - (Ankehengyi)
- Yin Pei Kang - (Jin Si Li)
- Yong Qi - (Shenlong)
- You Ni Ke - (Tong Yong Tong Meng)
- Yu Qi - (Limin)
- Zaiqi - (Simcere)
- Ze Qi - (Hicin)
- Zithromax - (Pfizer)
- Zithrome - (Hailing)

Czech Republic

- Azibiot - (KRKA)
- Azitrox - (Zentiva)
- Azyter - (Thea)
- Sumamed - (Teva)
- Zetamac - (Pfizer)
- Zitrocin - (Teva)

Denmark

- Azyter - (Thea)
- Zitromax - (Pfizer)

Finland

- Azyter - (Thea)
- Zithromax - (Pfizer)

France

- Azadose - (Pfizer)
- Azyter - (Thea)
- Ordipha - (Tonipharm)
- Zithromax - (Pfizer)

Germany

- Azithro - (Meda)
- Azithrobeta - (Betapharm)
- Azyter - (Thea)
- InfectoAzit - (Infectopharm)

- Ultreon - (Pfizer)
- Zithromax - (Pfizer)

Greece

- Alzirax - (Rafarm)
- Azibactron - (Cross)
- Azibiom - (Chemica)
- Azifarm - (Venifar)
- Azirox - (Pharmanel)
- Azirutec - (Zwitter)
- Azithral - (Cooper (Κοπερ))
- Azithrin - (Alet)
- Azitrolid - (Minerva (Μινερβα))
- Azivirus - (Verisfield)
- Azytan - (Medilat)
- Azyter - (Thea)
- Bezanin - (Iasis)
- Binozyt - (Sandoz)
- Ciroz - (Velka)
- Disithrom - (SJA)
- Flumax - (Gerolymatos)
- Goldamycin - (Leon)
- Gramokil - (Santa)
- Novozithron - (Novofarm (Νοβοφαρμ))
- Razimax - (Rafarm)
- Thoraxx - (Alapis)
- Throzimax - (Medilat)
- Zinfect - (Verisfield)
- Zithrobest - (Lyofin)
- Zithro-Due - (Vivax)
- Zithromax - (Pfizer)
- Zithroned - (Euroned)
- Zithropan - (Vocate)
- Zithroplus - (Balu)
- Zithrotel - (Anpharm (Ανφαρμ))
- Zithroxyn - (Help)
- Zitrax - (Genepharm)
- Zyramycin - (Leovan)

Hong Kong

- Athromax - (Quality)
- AZ-1 - (Nidoway)
- AZA - (XL)
- Azee - (Cipla)
- Azibact - (Swedish Trading)
- Azicine - (Stada)
- Azilide - (Yanny Medicines)
- Azimax - (Hovid)
- Azin - (Deltapharm)
- Azinix - (Julius Chen)
- Azirodin - (Julius Chen)
- Azirox - (Sincerity)
- Azitcin - (Wah Kin)
- Azithmax - (Vickmans)
- Azithrocin - (Eugenpharm)

- Azocin - (Eugenpharm)
- Aztrin - (Viewbest)
- Azure - (Eugenpharm)
- Azyter - (Thea)
- Binozyt - (Novartis)
- Clindal AZ - (APT)
- Euzimax - (Vickmans)
- Floctil - (Unison)
- Imexa - (Xepa-Soul Pattinson)
- Marzomax - (Vickmans)
- Nifomax - (Vickmans)
- Qualizith - (Quality)
- Sharozy - (Pharmasky)
- Sumamed - (Lee)
- Uni-Zitho - (Vickmans)
- Vick-Azithro - (Vickmans)
- Zarom - (Perfect Groups)
- Zathrin - (Star)
- Zetro - (Chariot)
- Zimax - (Unipharm)
- Zimycin - (Star)
- Zith - (Leon)
- Zithrin - (HealthCare PharmaScience)
- Zithromax - (Pfizer)
- Zmax - (Pfizer)
- Zotax - (Hovid)
- Zycin - (Natural Health)

Hungary

- Azi - (Sandoz)
- Azibiot - (KRKA)
- Azicid - (Generics)
- Aziwill - (Goodwill)
- Sumamed - (Teva)
- Zitinn - (Actavis)
- Zitrocin - (Teva)
- Zmax - (Pfizer)

India

- Acex - (Orion)
- Actimycin - (Venus)
- Alicin - (Allenge)
- A-OD - (Elisa)
- Apocin - (Apotex)
- Arcin - (Chemech)
- Arizith - (Arika)
- Arz - (Willow)
- Atm - (Indoco)
- Avzeth - (Positif)
- Az-1 - (Kopran)
- Azard - (Pharma-Tech)
- Azauk - (Aamorb)
- Azbir - (Birz)
- Azee - (Cipla)
- Azegud - (Biosync)

- Azeloc - (Symbiotic)
- Azforin - (Unichem)
- Azibact - (Ipca)
- Azibest - (Blue Cross)
- Azi-Big - (Bestochem)
- Azicip - (Cipla)
- Azicos - (Symbiosis)
- Azicure - (Radicura)
- Azid - (Indi)
- Azidraw - (Q Check)
- Azifast - (Ipca)
- Azifem - (Fem Care)
- Azifine - (Glenmark)
- Azigram - (United Lifecare)
- Azikab - (Lancer)
- Azikare - (Ankare)
- Azikil - (Maxo)
- Azileb - (Leben)
- Azilide - (Micro)
- Azilife - (Aqualife)
- Azilin - (Lincoln)
- Azilup - (Lupin)
- Azim - (BL)
- Azimac - (Mandar)
- Azimax - (Cipla)
- Azin - (Indo Pacific)
- Azina - (Zota)
- Azinex - (Aronex)
- Azinix - (Khandelwal)
- Azinova - (Bombay Tablet)
- Azintra - (Intra-Labs)
- Azintra-AX - (Intra-Labs)
- Aziom - (Zenon)
- Azipar - (Molekule)
- Azipokyn - (Misha)
- Azipos - (Aglowmed)
- Aziral - (Hiral)
- Azirid - (Armour)
- Aziriv - (East African)
- Azirock - (Ankom)
- Azis - (Taurus)
- Azisafe - (UniOrange)
- Azisara - (Sarabhai Piramal)
- Aziset - (Active)
- Azisia - (Willow)
- Azison - (Dr Alson)
- Azistar - (Sanify)
- Azisym - (Symbiosis)
- Azitas - (Intas)
- Aziter - (Gujarat Terce)
- Azith - (Zee)
- Azithom - (Om Biotec)
- Azithral - (Alembic)
- Azithral Jun - (Alembic)
- Azithro - (Ind-Swift)
- Azitone - (Keshav)
- Azitoz - (ATOZ)

- Azitrac - (Invision)
- Azitrin - (Pharmatech)
- Azitrop - (Elfin)
- Azitsa - (Akesiss)
- Azitus - (Zuventus)
- Azivar - (Zota)
- Aziwin - (Bal)
- Aziwok - (Wockhardt)
- Azix - (Alicon)
- Azla - (Candor)
- Azmag - (Magnus)
- Azmic - (Emar)
- Azobac - (Medinova)
- Azolid - (Scoshia)
- Azolife - (Dexter)
- Azom - (Finecure)
- Azomax - (Max)
- Azone - (NB)
- Azopet - (Vista)
- Azostar - (Gentech)
- Azras - (Rass)
- Azrea - (Cinerea)
- Azro - (Abbott)
- Azro AM - (Abbott)
- Aztin - (Laksun)
- Aztus - (Emcure)
- Azvig - (Madhav)
- Azy - (Uniroyal)
- Azylin - (Zota)
- Azysafe - (Overseas)
- Azystate - (Haledew)
- Azyxin - (Centaur)
- Azyxin Plus - (Centaur)
- Azza - (Wintech)
- Bezit - (Plus)
- Bio-AZ - (Biomax)
- Cazita - (Admac)
- Corzi - (DWD)
- Cumycin - (Curex)
- Dazy - (Daksh)
- Elgram - (Captab)
- Elzee - (Elder)
- Ertycin - (Abbott)
- Eszit - (Ester)
- Ezith - (Evershine)
- Flaag - (Flamingo)
- Forit - (Health Care)
- Fydozith - (Xieon)
- Gitro - (Plus)
- G-Thro - (Globus)
- Hizy - (Hos & Ins)
- Infurox - (Servocare)
- Itha - (Alna)
- I-Thro - (Zubit)
- Jocin - (DR Johns)
- Kanny - (Kalpataru)
- Laz - (Hetero)

- Laz-AX - (Hetero)
- Lazith - (Admac)
- Lethro - (Forgo)
- LG-Thral - (Anvik)
- Loromycin - (Novartis)
- L-Thro - (Lexus)
- Macrosafe - (MSN)
- Macrotar - (Torrent)
- Maxazi - (United Biotech)
- Myza - (Esma)
- Nizithro - (Neiss)
- Nodycin - (Nodysis)
- Orflaz Kit - (Aristo)
- Saf Kit - (Biochem)
- Zithrocin - (Biochem)
- Zycin - (Cadila)

Indonesia

- Aziwin - (Aventis)
- Azomax - (Dexa)
- Aztrin - (Pharos)
- Azyter - (Kalbe Vision)
- Binozyt - (Sandoz)
- Ethrimax - (Ethica)
- Maxmor - (Mahakam Beta)
- Mezatrin - (Sanbe)
- Sohomac - (Ethica)
- Trozin - (Tempo Scan Pacific)
- Zarom - (Pyridam)
- Zibramax - (Guardian)
- Zicho - (Nicholas)
- Zifin - (Yarindo)
- Zistic - (Bernofarm)
- Zithrax - (Kalbe)
- Zithromax - (Pfizer)
- Zitrolin - (Otto)
- Zycin - (Interbat)

Ireland

- Azromax - (Gerard)
- Azyter - (Thea)
- Zedbac - (Aspire)
- Zithromax - (Pfizer)

Israel

- Azenil - (Pfizer)
- Zeto - (Trima)
- Zithromax - (Pfizer)
- Zmax - (Pfizer)

Italy

- Azitrocin - (Pfizer)
- Batif - (Epifarma)
- Ribotrex - (Pierre Fabre)

- Trozocina - (Sigma-Tau)
- Zindel - (SoSe)
- Zitrobiotic - (Epifarma)
- Zitromax - (Pfizer)

Japan

- Zithromac - (Pfizer)

Malaysia

- Azicine - (Stada)
- Azimax - (Hovid)
- Azithro - (M & H)
- Binozyt - (Sandoz)
- Floctil - (Unison)
- Imexa - (Xepa-Soul Pattinson)
- Zithrolide - (Pharmaniaga)
- Zithromax - (Pfizer)
- Zmax - (Pfizer)
- Zynomax - (CCM)

Mexico

- Amsati - (Amsa)
- Atoxitom - (Landsteiner)
- Azibiot - (Mavi)
- Azidral - (Silanes)
- Aziphar - (Alpharma)
- Aziteva - (Teva)
- Azitrocin - (Pfizer)
- Azitrohexal - (Sandoz)
- Azo-Max - (Unipharm)
- Azotive - (Aspen)
- Aztrogecin - (Lakeside)
- Charyn - (Wermar)
- Craztronin - (Raam)
- Koptin - (Chinoin)
- Macrozit - (Liomont)
- Marzivag - (Novag)
- Medatz - (Bajamed)
- Mizotryn - (Liferpal)
- Sicalan - (Loeffler)
- Texis - (Atlantis)
- Tromicina - (Offenbach)
- Truxa - (Asofarma)
- Zertalin - (Collins)
- Zithran - (Ranbaxy)
- Zitroflam - (Rimsa)
- Zitroken - (Kendrick)

Netherlands

- Azacleus - (Nucleus)
- Azitro - (Merck)
- Azyter - (Thea)
- Bazyt - (Thea)
- Merckazitro - (Merck)

- Nucaza - (Nucleus)
- Zithromax - (Pfizer)

New Zealand

- Zithromax - (Pfizer)

Norway

- Azitromax - (Pfizer)
- Azyter - (Thea)

Philippines

- Aza-500 - (XL)
- Azeecor - (Akums)
- Azeemycin - (SRS)
- Azemax - (Cathay)
- Azi - (InnoGen)
- Azimax - (Twilight Litaka)
- Azin - (ACME)
- Azithro - (Natrapharm)
- Azithrogen - (Nutramedica)
- Azitrocin - (Mundipharma)
- Azo - (Mediwin)
- Azomycin - (Royale)
- Aztro - (Stallion)
- Azyth - (Sandoz)
- Decantin - (Lok-Beta)
- Geozit - (Geofman)
- Jazit - (Somatec)
- Macromax - (Domesco)
- Macrozyth - (Cipla)
- OD Mac - (Farma Iberica)
- Pediazith - (Medlink)
- Romzin - (Biopharma)
- Sitimax - (CSPC)
- Thromaxin - (ACME)
- Trozin - (Mercury)
- Wiltrozin - (Hizon)
- Zenith - (Pediatrica)
- Zithran - (Lloyd)
- Zithrocare - (Khriz)
- Zithrocin - (Pharma Nutria)
- Zithromax - (Pfizer)
- Zithrozan - (Biopharma)
- Zit-Od - (PSA)
- Zmax - (Pfizer)

Poland

- Abiazyt - (Artespharm)
- Azibiot - (KRKA)
- Azigen - (Generics)
- Azimycin - (Polfa Tarchomin)
- AziTeva - (Teva)
- Azitrin - (Genexo)
- AzitroLEK - (Sandoz)

- Azitro-Mepha - (Mepha)
- Azitrox - (Zentiva)
- Azycyna - (Adamed)
- Azytact - (Tactica)
- Azyter - (Thea)
- Bactrazol - (Teva)
- Canbiox - (Apotex)
- Macromax - (PharmaSwiss)
- Nobaxin - (Lek-Am)
- Oranex - (Farmacom)
- Sumamed - (Teva)
- Zetamax - (Pfizer)

Portugal

- 3Z - (Jaba Recordati)
- Arzomicina - (APS)
- Azimax - (Pfizer)
- Azimed - (Daquimed)
- Aziton - (Labesfal)
- Azitrix - (Pentafarma)
- Azixratio - (Ratiopharm)
- Azyter - (Thea)
- Biozitra - (BioSaude)
- Gigatrom - (Medilusa)
- Imrotim - (Statim)
- Lazitrom - (Azevedos)
- Neofarmiz - (Farmoz)
- Unizitro - (Tecnimede)
- Vascin - (Helm)
- Zithromax - (Pfizer)
- Zitrina - (Decomed)
- Zitrozina - (Sidefarma)

Russian Federation

- Azicid - (Zentiva)
- Azimycin - (Micro)
- Azithrox - (Farmstandart)
- Azithrus - (Sintez)
- Azitral - (Shreya)
- Aziwok - (Wockhardt)
- Azydrop - (Thea)
- Ecomed - (Avva)
- Hemomycin - (Hemofarm)
- Safocid - (Stada)
- Sumaklid - (Biosintez)
- Sumamecin - (Obolenskoe)
- Sumamed - (Pliva)
- Sumamox - (Oxford Laboratories)
- Sumatrolid - (Ozone)
- Sumazid - (Bryntsalov)
- Tremak - (Sanovel)
- Zetamax - (Pfizer)
- ZI-Factor - (Veropharm)
- Zithrocin - (Unique)
- Zitnob - (Nobel)

- Zitrolid - (Valenta)

Singapore

- Azimax - (Hovid)
- AZmycin - (Invent)
- Binozyt - (Sandoz)
- Zithromax - (Pfizer)
- Zmax - (Pfizer)

South Africa

- Azimax - (Teva)
- Binozyt - (Zydus)
- Clamelle - (Cipla-Medpro)
- Jubazi - (LeBasi)
- Ultreon - (Pfizer)
- Varimax - (MDI)
- Zeemide - (Ascendis)
- Zithrogen - (Mylan)
- Zithromax - (Pfizer)

Spain

- Altezym - (Alter)
- Aratro - (Arafarma)
- Azydrop - (Thea)
- Goxil - (Pfizer)
- Pefloden - (Vita)
- Toraseptol - (Warner Chilcott)
- Vinzam - (Almirall)
- Zentavion - (Warner Chilcott)
- Zitromax - (Pfizer)

Sweden

- Azitromax - (Pfizer)
- Azyter - (Thea)

Switzerland

- Azitro - (Acino)
- Zithromax - (Pfizer)

Thailand

- Azith - (Siam Bheasach)
- Azithrin - (TO-Chemicals)
- Azithro - (M & H)
- Azycin - (GPO)
- Azyter - (Thea)
- Binozyt - (Sandoz)
- Floctil - (Unison)
- Meithromax - (Meiji)
- Onzet - (M & H)
- Zithromax - (Pfizer)
- Zmax - (Pfizer)

Turkey

- Azacid - (Fako)
- Azax - (Nobel)
- Azeltin - (Biofarma)
- Azitro - (Deva)
- Azitrotek - (Deva)
- Azomax - (Kocak)
- Azro - (Zentiva)
- Azyter - (Thea)
- Tremac - (Sanovel)
- Zitromax - (Pfizer)
- Zitrotek - (Pfizer)

Ukraine

- Azax - (Nobel)
- Azibiot - (KRKA)
- Azicin - (Darnitsa)
- Azimed - (Arterium)
- Azinort - (Norton)
- Azithral - (Alembic)
- Azithro - (Sandoz)
- Azithromax - (Pharmascience)
- Azitrox - (Zentiva)
- Aziwok - (Wockhardt)
- Azo - (Tulip)
- Azro - (Eczacibasi)
- Hemomicin - (Hemofarm)
- Ormax - (Sperko)
- Sumamed - (Teva)
- Zatrin - (Euro Lifecare)
- Zetamax - (Pfizer)
- Ziromin - (World Medicine)
- Zithrocin - (Unique)
- Zithrolex - (October Pharma)
- Zomax - (Hikma)
- Zyomicin - (Kusum)

United Arab Emirates

- Azomycin - (Julphar)

United Kingdom

- Azyter - (Spectrum)
- Clamelle - (Actavis)
- Zedbac - (Aspire)
- Zithromax - (Pfizer)

Venezuela

- Amizin - (Giempi)
- Amovin - (Cofasa)
- Aruzilina - (Leti)
- Arzomidol - (Dollder)
- Atromizin - (Cafar)
- Azigram - (Vivax)

- Azimakrol - (Roemmers-Klinos)
- Azitrom - (SM)
- Azitromin - (Farma)
- Binozyt - (Sandoz)
- Ricilina - (Gynopharm)
- Saver - (Elmor)
- Surgot - (Klinos)
- Tromizid - (Medley)
- Zitromax - (Pfizer)
- Zival - (Valmor)
- Zocin - (Biogalenic)
