

**Conclusion:** This study identifies the high risk groups for new cases of syphilis in Victoria, Australia. It shows that re-infection is common as is unprotected sex, suggesting that safe-sex messages are not permeating this group of individuals. Network models demonstrate that individuals with high numbers of high-risk contacts should be targeted for epidemic control.

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22.008

#### Comparative in Vitro Activity of Zabofloxacin (DW-224a) Tested Against Multidrug-Resistant *Neisseria gonorrhoeae*

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**Background:** Zabofloxacin, a novel and potent fluoroquinolone active against respiratory pathogens (*Streptococcus pneumoniae*, *Haemophilus influenzae* and *Moraxella catarrhalis*, is currently undergoing early clinical development. Activity of zabofloxacin tested against *N. gonorrhoeae* (GC) having multidrug-resistant (MDR) patterns could position this new oral agent for wide applications in STD therapy.

**Methods:** A global collection of 35 highly selected GC isolates including strains with various penicillin, tetracycline and ciprofloxacin susceptibility patterns were tested by CLSI agar dilution methods using GC agar base with defined growth supplement. Concurrent quality controls (QC) used GC ATCC 49226 and commonly used facultative controls *E. faecalis* ATCC 29212 and *S. aureus* ATCC 29213. All QC results were within defined limits. Interpretive criteria were those of the CLSI (M100-S18, 2008), where available.

**Results:** The challenge GC were generally non-susceptible to penicillin (71%; 23% at  $\geq 2$  mg/L), tetracycline (77%; 31% at  $\geq 2$  mg/L) and fluoroquinolones (ciprofloxacin 40%; 17% at  $\geq 1$  mg/L); only one GC isolate had a zabofloxacin MIC at  $>0.5$  mg/L. Zabofloxacin was four- to -eight-fold more active than ciprofloxacin (MIC<sub>50</sub>, 0.06 mg/L). Ceftriaxone remained active (MIC<sub>90</sub>, 0.06 mg/L; 100.0% susceptible) against all GC tested. GC strains with elevated ciprofloxacin MICs (multiple QRDR mutations) also had higher zabofloxacin MIC results with ciprofloxacin-susceptible, -intermediate and -resistant strains having zabofloxacin MIC<sub>50</sub> results at 0.008, 0.03 and 0.5 mg/L, respectively. GC agar base supplements did not adversely effect zabofloxacin activity.

**Conclusions:** Zabofloxacin was significantly more potent (eight-fold) than ciprofloxacin against all MDR-GC. 97% of strains had a zabofloxacin MIC at  $\leq 0.5$  mg/L indicating activity against many strains currently defined as resistant to marketed fluoroquinolones; clinical trials should be considered.

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#### Etiology of Fever in Pregnant Women in Kathmandu, Nepal

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**Background:** To study the incidence and etiology of fever in pregnancy.

**Methods:** Prospective descriptive study conducted over a period of 24 months from September 2005 to August 2007 in the department of Obstetric and Gynecology, Kathmandu Medical College Teaching Hospital, Kathmandu, Nepal. All the admitted pregnant women with fever  $\geq 100.4$  °F ( $\geq 38$  °C) were enrolled in the study after taking verbal consent. They were investigated and managed according to the hospital protocol. Complete blood count, urine for routine, microscopy, culture and sensitivity, blood culture for Salmonella, Widal test, and blood for malarial parasite were routinely sent for all the cases. Tests like liver function test, AFB staining and culture were done whenever it was thought to be necessary.

**Result:** Total 82 cases of pregnancy with fever were admitted during the study period which accounted for 3.2% of the total pregnancy related admission. Common causes of fever were Urinary tract infection (43.9%), Enteric fever (23.1%) and viral hepatitis (8.53%). Chicken pox (1.2%), Mastitis (1.2%) and tuberculosis (1.2%) were the uncommon etiology. Fever with flu like symptoms without specific diagnosis was present in 20.73% of the cases.

**Conclusion:** Urinary tract infection and enteric fever were the most common cause of fever during pregnancy. Definitive diagnosis was not made in large number of cases due to limited diagnostic facilities for viral infections.

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22.010

#### Relationship Between Bacterial and Fungal Infection and Premature Rupture of Membranes

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Premature rupture of the membranes (PROM) is one of the most serious pregnancy complications. The aim of this work was to study the relationship between cervical infection and PROM. The bacterial and fungal infection along with IL-6 and CRP level have been analysed. Studied groups involved: 45 women including 20 with PROM in 24–32 gestational weeks and 25 in control group in 16–22 gestational weeks of uncomplicated pregnancy admitted for amniocentesis. Vaginal infection was present in 75% women with PROM and 52% in the control group. In PROM group the most common pathogens were: *Ureaplasma urealyticum*, *Candida albicans* and *Escherichia coli*. The significantly higher level of IL-6 in cervical mucous in PROM women in comparison to the control group has been found. No statistically significant difference in CRP level between both groups has been

observed. We concluded that PROM could be caused by local bacterial and fungal infection.

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### 22.011

#### A Metapopulation Framework for Explaining the Socio-Demographic and Geospatial Epidemiology of Gonorrhoea and Other Sexually Transmitted Infections in Heterosexual Populations

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**Background:** Sexually transmitted infections (STIs) have different socio-demographic and geospatial profiles. Gonorrhoea is concentrated in epidemiologically distinct subpopulations, but Chlamydia infections are more ubiquitous. Moreover, individual level factors (eg. number of new sex partners a year) are less influential than contextual factors (eg. age, ethnicity, residential area) in determining risk of infection. We propose a flexible modeling framework which explains these epidemiological features for gonorrhoea in the United Kingdom (UK), and then use the same model to investigate Chlamydia transmission.

**Methods:** We modeled 1,00,000 men and women organized into 100 subpopulations. The key difference between subpopulations was the concentration of individuals with high sexual activity, which followed a Pareto-like distribution defined by a single parameter,  $f$ . A proportion of sexual partnerships ( $p$ ) occurred exclusively within the same subpopulation, with the remainder occurring with available partnerships from outside the subpopulation. Gonorrhoea and Chlamydia were depicted as susceptible-infected-susceptible deterministic models. Transition between compartments followed published estimates.

**Results:** When using parameters appropriate for gonorrhoea, we found that  $p = 0.7$  and  $f = 0.4$  produced an incidence compatible with that for sexually active ages in the Greater London population (~200 cases per 100,000 population per year). Most subpopulations had an incidence lower than the general population, while subpopulations where self-sustaining transmission was possible had incidence rates which were ten-fold higher. We kept  $p = 0.7$  and  $f = 0.4$  while modifying other parameters to depict Chlamydia; the model produced appropriate incidence rates (~400 per 100,000). The modeled Gini coefficient, which measures how much the distribution of cases deviates from equality, was 0.47 for gonorrhoea and 0.26 for Chlamydia, which correlated well with previous UK-based estimates for these infections (0.49 and 0.26 respectively).

**Conclusion:** The metapopulation framework explains how contextual and individual level factors interact to produce the observed epidemiology of STIs.

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### 22.012

#### Genital Tuberculosis-A Silent Infection in Infertile Indian Population

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**Background:** Genital tuberculosis is reported to be a major factor causing infertility in Indian women and often exists without any apparent signs and symptoms.

**Aim:** To study the effect of tuberculosis, a common infectious disease in the Indian subcontinent, its subsequent effect on female fertility.

To assess the clinical presentation of genital tuberculosis and to study various modes of diagnosis.

**Method:** Study was done between Jan 2005- Dec 2006 on 250 infertile women at an infertility care and assisted reproductive unit in Central India, in whom there was clinical suspicion of genital tuberculosis. All underwent diagnostic laparoscopy and biopsy for confirmation and other causes of infertility were excluded. Utility of various laboratory parameters AFB smear, AFB culture and PCR to diagnose genital tuberculosis were assessed. Laparoscopic findings were correlated with laboratory results.

**Result:** The prevalence of genital TB was higher than one might imagine. Among the 170 infertile women affected with genital tuberculosis there were cases of primary ( $n = 149$ ) and secondary ( $n = 21$ ) infertility. The diagnosis of endometrial tuberculosis was confirmed by AFB smear 52, AFB culture 6, PCR 112.

Treatment with anti-tubercular drug therapy resulted in increased conception rate.

Laparoscopy examination is a valuable procedure for the etiological diagnosis of tubal infertility and correspond with positive PCR 88%, AFB smear 72% and AFB culture in 98%.

**Conclusion:** It is essential for a gynaecologist working in developing countries to anticipate possibility of genital tuberculosis in infertile patients. This study highlights the fact that tuberculosis, a chronic infectious disease, is one of the major etiologic factors of female infertility, especially on the Indian subcontinent.

Female genital tuberculosis is a symptom-less disease inadvertently uncovered during investigation for infertility. Clinicians need to be aware of the existence of this important cause of infertility in women, in view of the current upsurge in tuberculosis worldwide.

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### 22.013

#### Access to Sexually Transmitted Infections Services in Rural South Africa: An Evaluation of the Implementation of the National Treatment Guidelines

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Treatment of sexually transmitted infections (STI) is a major public health priority for South Africa. In 1996, the Department of Health adopted the syndromic case management to improve STI treatment by establishing the National