

tant to ceftriaxone, respectively. Serotype 6A and 6B isolates built up the high resistance to chloramphenicol.

**Conclusion:** The antibiotic resistance of invasive *S. pneumoniae* isolates from meningitis pediatric patients in Southern Vietnam is at an alarming rate with the significant decrease of ceftriaxone susceptibility.

<https://doi.org/10.1016/j.ijid.2020.09.172>

0130

**Epidemiology, risk factors and molecular analysis of carbapenem-resistant *Enterobacteriaceae* (CRE) in Mthatha, Eastern Cape, South Africa**



S.D. Vasaikar<sup>1,\*</sup>, P. Hanise<sup>2</sup>, D.T. Abaver<sup>3</sup>

<sup>1</sup> WSU, Laboratory Medicine & Pathology, Mthatha, EASTERN CAPE, South Africa

<sup>2</sup> National health laboratory services, Mthatha, South Africa

<sup>3</sup> Walter Sisulu University, Laboratory Medicine & Pathology, Mthatha, South Africa

**Background:** The emergence of carbapenem resistance in Enterobacteriaceae is an important threat to global health. Reported outcomes of infections with carbapenem-resistant Enterobacteriaceae (CRE) are poor. Commonly used antibiotics are generally inactive against CRE. Therefore, timely detection of CRE is of paramount importance. This study aimed to investigate the resistance genes responsible for CRE in Mthatha and to identify risk factors.

**Methods and materials:** Study design – Prospective cohort study. Study period – 23 April to 27 September 2019. Setting – Eastern Cape province, SA. Study population – All adult and paediatric CRE patients. CRE case definition according to CDC 2018. ID and AST-bioMérieux Vitek 2 system. Detection of the *bla*<sub>OXA-48</sub>, *bla*<sub>KPC</sub>, *bla*<sub>NDM</sub>, and *bla*<sub>VIM</sub> by the RESIST-4 OKNV assay (Coris). Patients were interviewed to determine risk factors associated with CRE.

**Results:** Forty-four non-duplicate CRE patients were identified during the study period from microbiology lab at NMAH. Enterobacteriaceae species: *K. pneumoniae* 22 (61.4%), *E. cloacae* 10 (22.7%), *E. coli* 2 (4.5%) and *K. oxytoca*, *P. rettgeri* and *M. organii* 1 each (4.3%). Adult patient 29 (65.9%) and paediatric 15 (34.1%). Race: all black patients except one white. CRE genes-*bla*<sub>OXA-48</sub> 22 (50%), *bla*<sub>NDM</sub> 8 (18.2%), two isolates (4.5%) with both *bla*<sub>OXA</sub> and *bla*<sub>NDM</sub>. We did not find any *bla*<sub>KPC</sub> and *bla*<sub>VIM</sub> in our setting and 12 (27.2%) isolates were negative for all OKNV. Outcomes: Demised 18 (40.9%), still admitted in the ward 1 (2.3%), discharged home on basis of clinical grounds 22 (50%) and 3 (6.8%) were transferred back to the district hospitals. HAI in 27 (61.4%) with VAP 8, HABS 8, CAUTI 5, SSI 3 and CLABSI in 3. Risk factors for CRE acquisition were antibiotic exposure 25 (58.7%), ICU stay 7 (15.9%), received medical care in last 6 months 35 (79.6%) and none travelled outside RSA. HIV positive – 19 (43.2%).

**Conclusion:** In our setting our CRE mortality rate is 40.9%, common CRE genotypes are *bla*<sub>OXA-48</sub> and *bla*<sub>NDM</sub>. *K. pneumoniae* is the most common CRE-producing Enterobacteriaceae and antibiotic exposure is an important risk factor in Mthatha and surrounding areas.

<https://doi.org/10.1016/j.ijid.2020.09.173>

0131

**Prevalence of macrolide and fluoroquinolone resistance-associated mutations in *Mycoplasma genitalium* in Hong Kong**



P.C.D. Chan<sup>1,\*</sup>, K.M. Kam<sup>1</sup>, C.K. Kwan<sup>2</sup>, P.H. Chung<sup>3</sup>

<sup>1</sup> Stanley Ho Centre for Emerging Infectious Diseases, Faculty of Medicine, Shatin, Hong Kong, China

<sup>2</sup> Department of Health, Hong Kong, Hong Kong, China

<sup>3</sup> Chinese University of Hong Kong, School of Public Health, Hong Kong, Hong Kong, China

**Background:** *Mycoplasma genitalium* (MG) is a common cause of non-gonococcal urethritis (NGU) and the surge in MG antibiotic resistance is alarming. In Hong Kong, NGU is the most prevalent sexually transmitted infection (STI) in males. However, the local prevalence of MG and the burden of antimicrobial resistance remain unknown. This study aimed to determine the prevalence of antibiotic resistance in MG among STI male patients in Hong Kong.

**Methods and materials:** Male patients attending a sexually transmitted diseases clinic for treatment of NGU and presenting with urethritis were included. First-void urine specimens were collected and screened for MG infection by real-time PCR (Genesig, United Kingdom). *M. genitalium*-positive samples were tested for macrolide resistance-associated mutations in the 23S rRNA gene using the ResistancePlus MG assay (SpeeDx, Australia), and fluoroquinolone resistance-associated genetic markers in *gyrA* and *parC* by PCR and sequencing.

**Results:** The prevalence of MG in male patients with symptomatic urethritis was 10.8% (17/157). Among 17 men with MG infection, 5 (29.4%) were initially treated with azithromycin and 4 (23.5%) on moxifloxacin. Overall, 11 patients (64.7%) harbored macrolide resistance-associated mutations in the 23S rRNA gene. The *GyrA* and *ParC* genes were successfully amplified and sequenced in 15 MG-positive cases, of which 60.0% (9/15) possessed fluoroquinolone resistance-associated mutations (S831 or D87Y) in *parC*. The presence of MG with alterations in both 23S rRNA gene and *parC*, potentially associated with treatment failure with macrolide and fluoroquinolone regimens, was 46.7% (7/15).

**Conclusion:** The emergence of MG carrying both macrolide and fluoroquinolone resistance-associated mutations is raising concern about incurable MG for which recommended therapies would be ineffective. This study indicates further antimicrobial drug resistance surveillance would be needed to limit the spread of macrolide and fluoroquinolone resistance in MG in Hong Kong.

<https://doi.org/10.1016/j.ijid.2020.09.174>

0132

**Devising communication strategies for improving public awareness on responsible antibiotic use: A case study of WHO campaign**



D. Bhaskar

Regional Centre for Biotechnology, Academics, Faridabad, India

**Background:** Tackling antibiotic resistance is a global priority bordering emergency. Multi country initiatives, as with WHO campaign, are becoming increasingly effective in tackling societal issues. WHO campaign for World Antibiotic Awareness Week (WAAW). 131 countries officially reported activities in all six WHO regions. With over 4.2 billion users of social media around the world