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Paper Poster Session
Lessons from surveillance of resistance in Gram-negatives

Report on emergence of Stenotrophomonas maltophilia resistant to trimethoprim-sulfamethoxazole from Brunei Darussalam

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Background: *Stenotrophomonas maltophilia* is increasingly recognised as an important nosocomial pathogen. Treatment of invasive *S. maltophilia* infections is difficult due to intrinsic/acquired resistance to various antibiotics. Trimethoprim-sulfamethoxazole (co-trimoxazole) sensitivity is used as an identification test for *S.maltophilia* and is recommended as the treatment of choice. We report emergence and prevalence of *S. maltophilia* resistant to co-trimoxazole at RIPAS Hospital, Brunei Darussalam since it was first isolated in July 2013.

Material/methods: All S.maltophilia isolates from various clinical specimens from July 2013 to October 2015 were processed according to CLSI 2013. . Any isolate resistant to Trimethoprim-sulfamethoxazole (<10mm) by Kirbey-Bauer disk diffusion method was further confirmed by Minimum Inhibitory Concentration (MIC) using VITEK 2® (Biomeriux) and/or E-strip (Biomeriux). Any isolate showing MIC value > 8/312 (sensitive ≤2/38 and resistant ≥4/76) was confirmed resistant to co-trimoxazole.

Results: During the study period, 282 S.maltophilia isolates were identified. 18 isolates were resistant to co-trimoxazole (6. 7%) by disk diffusion method and by both MIC methods. One additional isolate was resistant by disk diffusion and VITEK 2® (>8/312) but intermediate sensitivity by Estrip MIC

Conclusions: Majority of co-trimoxazole resistant *S. maltophilia were* from respiratory specimens (12/18). Seventeen patients were not treated since it was considered to be a coloniser and two patients were treated with ceftazidime who were clinically symptomatic. Of the two first cases was 67 years old, an ICU patient with diabetes mellitus, hypertension adrenal insufficiency, COPD on prolonged mechanical ventilation and tracheostomy died due to multi-organ failure and sepsis. Second case was 67years old leukemic patient who recovered with ceftazidime treatment.
Co-trimoxazole has been the drug of choice for the treatment of *S. maltophilia* infections, but emergence of resistance to co-trimoxazole poses a serious threat. This resistance is mediated through class 1 integrons and IS*CR* elements linked to *sul*2 genes in *S. maltophilia.* Rates of resistance to co-trimoxazole ranged from 2% in Canada and Latin America to 10% in Europe. Alternative agents such as ticarcillin–clavulanate, ceftazidime, flouroquinolones, minocycline and chloramphenicol have been used with variable success and most often as combination regimens.
Prolonged mechanical support, exposure to broad spectrum agents and impaired host defences are the predisposing factors for *S. maltophilia* infection. Finding prevalence of 6.7% co-trimoxazole resistant isolates in Brunei Darussalam emphasis the need for active resistance surveillance.
Hence proper antibiotic stewardship, avoidance of inappropriate use of antibiotics namely broad spectrum antibiotics, avoiding prolonged use of foreign devices, reinforcement of hand hygiene practices and application of appropriate infection control practices would be necessary to prevent the spread of infection by this organism. Successfully treatment one *S. maltophilia* infection resistant to co-trimoxazole with ceftazadime need further case-controlled studies.