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ePoster Viewing

Antimicrobials: resistance surveillance

"Quinolone resistance is almost 70% amongst *Salmonella* Typhi diagnosed in Singapore; a two-year retrospective review of laboratory data"

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Objective

Guidelines for antibiotic treatment of typhoid fever recommend fluoroquinolones (FQ), ceftriaxone or azithromycin. In children FQ show greater efficacy than ceftriaxone and the option of an oral route adds to the attraction of FQ. Typhoid fever in Singapore is largely imported and susceptibility data reflects that of the countries of origin. This is probably true for other similarly developed and hygienic countries. We reviewed our susceptibility data to increase awareness of FQ resistance and to improve empirical choices for returning travellers.

The hypothesis was that *Salmonella* Typhi were largely susceptible to FQ.

Methods

A two year retrospective review of susceptibility data extracted from the Tan Tock Seng Hospital laboratory information system. The hospital has ~1500 beds and serves an adult population. The laboratory is CAP accredited. Isolates were identified with MALDI TOF mass spectroscopy (Bruker) and classical serotyping. Susceptibility data were obtained with the Kirby Bauer disc diffusion method following CLSI susceptibility testing guidelines. It is important to note that low level resistance to FQ predicts failure of therapy in typhoid fever. Low level resistance used to be detected with nalidixic acid, and was reported as 'intermediate' but CLSI recently reduced their FQ breakpoints to capture this part of the population without the need for setting up a nalidixic acid disc. All isolates reported here as susceptible to ciprofloxacin were either also susceptible to nalidixic acid or were susceptible to ciprofloxacin according to the lower, revised, CLSI breakpoints. All cases of low level resistance should have been captured and reported as 'intermediate'.

Results

There were 23 records of S.Typhi, ten of S.Paratyphi A and one of S.Paratyphi B; a total of 34 from September 1st 2012 to August 31st 2014. All 34 were susceptible to ceftriaxone and 32 to amoxicillin but only 11 were susceptible to ciprofloxacin. Twenty isolates were intermediate and three were resistant to ciprofloxacin; a 'non-susceptible' rate of 23/34 (67%).

Conclusion

The 67% 'non-susceptible' rate of S. Typhi and S. Paratyphi to FQ show that FQ are not a good empirical choice for our patient population. In contrast, 100% of isolates were susceptible to ceftriaxone. Our patients acquire typhoid fever from surrounding countries in South East Asia. Awareness of recent susceptibility data from far away destinations popular with tourists and business travelers is important for the safe management of these travellers.