

Emergence Of XDR Typhoid: An Alarming State To The Health Professionals

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Dear Sir,

Keeping in mind the outbreak of typhoid fever in Pakistan, we would like to bring an important issue to your attention. Typhoid is a serious illness and is a major cause of morbidity and mortality in infants and adults. It is endemic in areas where the establishment of pure water supplies and sewage control are insufficient, namely, the Indian sub-continent, South-East Asia, Africa, the Middle-East, South and Central America.¹ Disease is spread via contaminated food and water and poor hygiene, resulting in a series of manifestations. Disease remains endemic in our country with a higher health and financial burden to the community. Despite improvement in the access to the health facility and literacy, prevalence of typhoid remains unchanged. Pakistan has the highest incidence (451.7 per 100,000 persons/year) of typhoid fever.² Asia also has the highest regional frequency rate of 274 cases per 100,000 populations, which is five times greater than the second highest, Latin America.³

Typhoid carries a high incidence of morbidity and mortality; it can affect any age group, but the greatest incidence is found in the pediatric age group.⁴ Symptoms include high fever, headache and, abdominal pain, diarrhea/constipation, cough and loss of appetite. It is also known to have very serious complications such as internal bleeding, perforation and encephalopathy. Initially, typhoid was easily treated by the first line antibiotics, like amoxicillin, chloramphenicol and co-trimoxazole.⁵ These drugs remained the drug of choice for patients with typhoid for many years, but due to excessive use, Multidrug Resistance (MDR) strands of Salmonella Typhi emerged. This resulted in a shift to 3rd generation cephalosporins like ceftriaxone, cefixime and fluoroquinolones. This group of antibiotics remained to show sensitivity for nearly the last two decades. However, irrational use of these drugs too, led to the evolution of Extensively Drug Resistant (XDR) strands which were resistant to these medications as well. Reduced susceptibility to Fluroquinolones and 3rd generation Cephalosporins and first, the emergence of Multidrug Resistance (MDR) and now Extensively Drug Resistant (XDR) strands has complicated treatment. In November 2016, an outbreak of XDR typhoid fever began in Hyderabad and spread to the city of Karachi and to several districts, leading to several deaths. . Despite the rapid spread of highly resistant typhoid across Sindh, the rural areas are deprived of any public

sector facility capable of carrying out the gold standard laboratory test for typhoid, a blood culture. During 2016-18, 8188 cases of typhoid have been reported out of which 64% were XDR typhoid. Now, there is evidence to believe that strands resistant to the drugs that worked against XDR are emerging. Apart from parenteral Carbapenems, Azithromycin is the only oral/outpatient treatment option available for XDR Typhoid.

These facts were stressed on the need for a through history to be taken and detailed investigations to be performed to rule out XDR typhoid, before starting treatment, as azithromycin is the only oral drug available for XDR typhoid and the growing resistance to it is worrisome. Emphasis should also be placed on the administration of the typhoid vaccine in patients with increased risk of exposure. It is a parenteral polysaccharide Vi vaccine, administered as a single 0.5mL intramuscular injection, at anytime after the age of 6 months. We would like to strongly suggest judicial and restricted use of azithromycin for 'non-typhoid' infections, such as upper respiratory tract infections. These measures can play a great role in decreasing the incidence of XDR typhoid. We also suggest regular monitoring of antibiotic usage, with the aim that suitable reduction in the use of these antibiotics be adopted in order to reduce the emergence of resistant salmonella strains in our community.

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