Multidrug-Resistant Nontyphoidal Salmonella Associated with Invasive Disease in an Immunocompetent Child

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To the Editor: We would like to share ideas on nontyphoidal salmonella (NTS) causing invasive bloodstream infection in immunocompetent hosts. NTS, earlier considered to cause self-limited gastroenteritis, is now being recognized as a major cause of invasive infection. Two serotypes most commonly implicated in human NTS infection are *Salmonella* Enteritidis and Typhimurium [1]. We recently encountered a similar case in our institute.

A 3-y-old developmentally normal child, immunized as per Nation Immunization Schedule presented with prolonged pyrexia of 7 d associated with abdominal pain (previous similar history, 2 wk back), with pallor and hepatosplenomegaly. He had anemia with lowest leukocyte count of 5100 cells/mm³. Widal was suggestive with O and H titers being 1:320 and 1:160, respectively. He was started on intravenous ceftriaxone at 75 mg/kg/d; however, due to persistent high-grade fever, oral azithromycin at 20 mg/kg/d was added. Blood culture grew *Salmonella* Enteritidis after 5 d of incubation by MALDI TOF method, sensitive to piperacillin-tazobactam, imipenem, meropenem, and resistant to ceftriaxone, ceftazidime, cefepime, ciprofloxacin, levofloxacin, cotrimoxazole. Molecular or phenotypic characterization for the method of resistance was not performed. He responded to intravenous meropenem and oral azithromycin within 7 d. Workup for underlying immunodeficiency was negative and typhoid vaccination was given 4 wk later.

Although data from India are lacking, similar data about the prevalence of iNTS strains from sub-Saharan Africa shows the prevalence of multidrug-resistant (MDR) iNTS to be 77.2% with 15% resistance to ceftriaxone, a drug

considered important for iNTS. MDR isolates were associated with poor outcomes and increased case-fatality rate up to 14.5% [2]. Sequence type ST313 followed by ST11 have been implicated as common causes for iNTS infection [3]. Currently, the diagnosis is based mainly on culture and isolation of salmonella from a normally sterile site. To conclude, although rare, multidrug-resistant nontyphoidal salmonella can cause invasive disease even in immunocompetent children from the Indian subcontinent.

Declarations

Ethical Approval All relevant ethical guidelines have been followed for data collection and reporting.

Conflict of Interest None.

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