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Molecular characterization of multidrug-resistant Salmonella Isangi in hospitalized patients

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2008-08-19T09:22:39Z
http://hdl.handle.net/10539/5429

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ABSTRACT

Extended-spectrum beta-lactamase (ESBL)-producing *Salmonella enterica* serotype Isangi has emerged as a common *Salmonella* serotype affecting mainly children in hospitals throughout South Africa. Between 2000 and 2002, 279 *S.* Isangi isolates from single infection episodes were referred from 21 hospitals in 5 provinces to the Enteric Diseases Reference Unit of the National Institute for Communicable Diseases of South Africa. All isolates were subjected to antibiotic susceptibility testing and three disk-diffusion methods confirmed ESBL-production in 273 isolates. PCR and nucleotide sequencing of 101 isolates identified TEM-1 (2%), TEM-63 (91%), a novel TEM-131 (7%), and SHV-5 (2%), but CTX-M was not found. Plasmid profiling produced types with 1 to 6 plasmids, 7.4kb to 166kb in size, which were neither serotype nor ESBL-type specific. Pulsed-field gel electrophoresis revealed four major clusters while sub-clusters with identical, or near identical banding patterns suggested extensive intra-hospital transmission and clonal spread between hospitals and provinces in South Africa.