Non-Typhoidal *Salmonella* Mixed Infections Among Children with Bacteraemia Admitted to the Manhiça District Hospital

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Background: Non-typhoidal *Salmonella*, particularly *Salmonella* Typhimurium and *Salmonella* Enteritidis have emerged as an important cause of infantile or HIV-infected adult bacteraemia in sub-Saharan Africa. Mixed *Salmonella* infections with different serovars in the same patient have rarely been reported previously. Here we present 11 cases of bacteraemia in children with simultaneous detection of two strains assigned to different serovars of *Salmonella* in a single episode.

Methods: Twenty-five *Salmonella*-positive blood samples recovered from children admitted to the Manhica District Hospital were investigated. The obtained isolates were shipped to Universidad de Oviedo (Spain) for characterization with regard to serovar, antimicrobial resistance profile (phenotype/responsible genes), plasmid content, phage type, PFGE and MLST.

Results: Of the 25 *Salmonella* strains, 21 were *S.* Enteritidis and 15 *S.* Typhimurium. PCR revealed mixed infections by both serovars in 11 patients. *S*. Enteritidis isolates showed six PFGE profiles, most belonged to ST1479, and all except two were multidrug resistant (ampicillin, chloramphenicol, streptomycin, sulfonamides, tetracycline and trimethoprim), due to the presence of pUO-SeVR1-like plasmids. *S*. Typhimurium showed eight PFGE patterns and belonged to sequence type ST313. 12 *S.* Typhimurium were also MDR (ampicillin, chloramphenicol, streptomycin, sulfonamides and trimethoprim), associated with the existence of pSLT-BT-like or pSLT-A130-like plasmids. Most *S*. Enteritidis and *S*. Typhimurium isolates were PNR, indicating that previously unrecognized phage types are circulating in Mozambique.

Conclusions: We report the occurrence of mixed infections by *S.* Typhimurium ST313 and *S.* Enteritidis ST1479 in Mozambican children. Derivatives of the *Salmonella* virulence plasmids pSEV (pUO-SeVR1-like) and pSLT (pSLT-BT-like and pSLT-A130-like) are responsible for the MDR phenotype shown by most isolates.