BACTERIAL CONTAMINATION OF SALINE NASAL IRRIGATIONS IN CHILDREN

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Objective
Nasal saline irrigations (NSIs) are considered safe, but saline bottle bacterial contamination has been described, possibly leading to the spreading of bacterial strains into the nasal cavities. This study aims at evaluating bacterial colonization of saline solution in hospitalized children daily undergoing NSIs by the use of a syringe bulb and saline solution bottle.

Methods
Caregivers were instructed to periodically pick up 5 ml samples of saline solution from the bottle; microbiological analysis aimed at isolation and identification of bacterial species.

Results
118 children (55.9% males, mean age=17.0±4.8 months) were recruited, and 253 samples were globally collected. None of the patients developed acute nasosinusitis infection. 21.7% of samples were positive at microbiological assessment. Bacterial contamination occurred significantly (p-value=0.003) earlier when NSIs were administered by the healthcare professionals compared to the parents. The number of positive samples at microbiological assessment significantly (p-value < 0.001) increased over time, with a mean 14.3% daily increase. Staphylococcus aureus was the most frequently detected bacterium (28.6%), followed by Neisseria spp. (17.5%), and S. maltophilia and Klebsiella pneumonieae (14.3% each).

Conclusions
These data suggest that children with a T2FPPD are clinically different from children with T1PPD, as they have a more complex clinical presentation that includes not only adenoidal disease and audiological impairment, but also an underlying allergy or atopy. The possibility that the factors mentioned above may be differently involved in the heterogeneous clinical manifestations occurring in otitis-prone children needs to be further investigated in ad hoc epidemiological studies.

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