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008 : Adenoids, Friends Or Foes?

Session D

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The main goal of this study is to evaluate the existence of a link between biofilm assembly on adenoids and the incidence of recurrent infections within a paediatric population.

Thirty-three different bacterial genera were isolated from 186 samples (nasal/adenoid scrubs and adenoid biopsies) being *Haemophilus*, *Neisseria*, *Streptococcus* and *Staphylococcus* the most frequent. Biofilms were present in 27.4% of the adenoid samples as assessed by SEM. Since the aim of the study is to assess the role of biofilms on adenoid colonization/ invasion and onset of infection a group of samples harbouring clinically relevant bacteria (*H.influenzae*, *S. aureus*, *S. pyogenes*, *S. pneumococcus* and *Moraxella*) both on the adenoid surface and core were selected for further studies.

Based on biofilm assembly *in vitro*, assessed by crystal violet assay, bacteria were classified as weak, moderate and strong biofilm assemblers. No direct relation between the ability to assemble biofilms *in vitro* and the presence of biofilms on the adenoid (biofilm *in vivo*) was found. A similar result was obtained for antibiotic susceptibility with the majority of bacteria being antibiotic susceptible independently of its origin (sample with or without biofilms).

This result might be explained at least partially, by the nature of the sample since the adenoidectomy can only be performed in individuals without infection.

H. influenzae, the most isolated bacterium, is an opportunistic pathogen, highly adapted to colonize the upper respiratory tract and easily progresses to infection, especially in children.

For this reason, virulence factors such as the capsular type were investigated by PCR.

However, all strains were characterized as non-capsulated, which might explain adenoid colonization and biofilm formation, as have been also described in the literature.

Further studies must be performed to validate the thesis that adenoids function as a reservoir of etiologic agents of respiratory and ear infections.