**P012** Localisation and Regulation of Antimicrobial Peptides in Tonsils

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Recurrent acute tonsillitis (RAT) is a common infection of adults and children. The role of cationic antimicrobial peptides (AMPs), which are synthesized endogenously and are broad spectrum antimicrobial agents, is currently unknown in this disease. This study investigated the localisation and regulation of AMPs in human tonsils isolated from patients with RAT and control patients having tonsils removed for obstructive sleep apnoea or snoring.

Reverse transcription-PCR identified the expression of six AMPs encoding LL-37, human (h)β-defensins 1-3 and LEAP-1 and 2 in human tonsil tissue. Immunohistochemistry confirmed the synthesis of the peptides and localised the hβ-defensins and LL-37 to the epithelial surface, predominantly in the outer layers of stratified squamous epithelial cells. Further studies using semi-quantitative and real-time PCR were employed to quantify the expression of LL-37 and hβ-defensins in whole tonsil tissues and epithelial samples from RAT patients and controls. Preliminary data indicate levels of the AMPs are increased in RAT sufferers.

These data suggest that AMP expression in tonsils is up regulated in response to infection.