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Investigation of *in-vitro* Antibacterial Properties of Human Cerumen of Healthy Individuals Attending the National Hospital of Sri Lanka

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Background: Prevalence of bacterial ear infections is moderately high in developing countries like Sri Lanka. Absence of human cerumen is known to predispose to ear infections.

Objectives: To investigate *in-vitro* antibacterial properties of human cerumen.

Methodology: A cross sectional study involving individuals of all age groups attending the ear, nose and throat clinic at National Hospital of Sri Lanka was conducted. Patients with middle or external ear pathology were excluded. Hundred cerumen specimens were collected to study the antibacterial activity using spread plate count method. Cerumen suspensions of 3.5% were prepared aseptically and inoculated on nutrient agar and incubated at 37 ^{0}C for 24 hours. Any microbial growth was noted. The cultures which did not show any growth on nutrient agar were considered as sterile and they were subjected to further examination. Freshly isolated control bacterial strains; *Staphylococcus aureus* ATCC 25923, *Eschereria coli* ATCC 25922 and *Pseudomonas aeruginosa* ATCC 27853 were used to make inoculums in nutrient broths. One in ten dilutions of 3.5% cerumen preparations were inoculated in blood agar plates and incubated at 37 ^{0}C for 24 hours. Sterile cerumen samples were further examined with *E. coli*, *P. aeruginosa* and *S. aureus.* Antibacterial properties of human cerumen were qualitatively assessed by comparing the growth of bacteria in the cerumen suspension against control samples. All data were analyzed using descriptive statistics using SPSS.

Results: Of 100 cerumen specimens tested 44 (44.0%) specimens were sterile. Sterile cerumen samples showed antibacterial activity against *E. coli*, *P. aeruginosa* and *S. aureus;* 93%, 89% and 66%, respectively.

Conclusions: Human cerumen possesses antibacterial activity against *Staphylococcus aureus*, *Pseudomonas aeruginosa* and *Escherichia coli*.

Keywords: *Human cerumen, Antibacterial properties*