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Isolation and characterization of bacterial species from patients with dental caries and caries-free subjects

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Background: The oral cavity harbours a large number of bacterial species as normal flora existing as biofilm. Dental disease such as dental caries results when there is a shift in the balance of bacteria towards pathogenic species within these biofilms.

Objective: The objective of this study was to isolation, identification and characterization of oral bacterial species of patients with dental caries and caries-free healthy control subjects.

Materials & Methods: A standard bacteriological procedures were followed in the isolation of bacteria. The identification of bacteria was carried out using Matrix-Associated Laser Desorption Ionisation–Time of Flight–Mass Spectrometry (MALDI–TOF–MS) (Bruker MALDI Biotyper system). The characterization of bacteria involved in the determination of biofilm forming potential and assessment of synergistic antimicrobial action of manuka honey and gentamicin against the oral species.

Results: A total of 13 bacterial species were isolated from 35 orals samples (10 from patients with dental caries); of which 7 bacterial species have been isolated for the first time in Saudi Arabia. The Streptococcus spp. exhibited varied biofilm-forming potential and response to synergistic antimicrobial activity of manuka honey and gentamicin.

Conclusion: The isolation of 7 bacterial species for the first time from dental caries and caries-free subjects in Saudi Arabia warrants a larger prevalence study involving molecular and phenotypic tests to assess their role in health and disease in Saudi population.

Biography

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