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MOrth Dissertation Title:

Genotypic variation of Candida albicans during orthodontic therapy

ABSTRACT

Candida is a common oral, opportunistic pathogen. The aim of this longitudinal study (12-months) was to analyze the genotypes of sequential isolates of Candida albicans in a cohort of healthy consistent candidal carriers (‘carriers’) during fixed orthodontic appliance therapy. 11 of 97 subjects were ‘carriers’. Candida isolates from baseline samples (T0) and sequential visits after insertion (T1 to T10) were speciated and RAPD fingerprint patterns of 101 sequential Candida albicans isolates were analyzed with PCR and gel electrophoresis. Phenotype of the isolates was also evaluated using standard sugar assimilation and fermentation criteria. A similarity coefficient (SAB) for each pair of strains was calculated and clusters of similar strains grouped using Dendrogram analysis of the RAPD gel profiles. The composite dendrogram of all isolates indicated that the Candida populations in this cohort are genotypically dissimilar although collected from the same geographic locale and, from a similar healthy, age group. Taken together, our data indicate that genotypes of a majority of the cohort (6 of 11 consistent carriers) show minor evolutionary variations in profile and genotypic ‘shuffling’ over a 12 month period, implying this may be a survival mechanism of this common, human, opportunist pathogen residing in a hostile oral environment.