Concentrations of thiocyanate, hypothiocyanite, 'free' and 'total' lysozyme, lactoferrin and secretory IgA in resting and stimulated whole saliva of children aged 12-14 years and the relationship with plaque accumulation and gingivitis.

Abstract:

Resting and stimulated whole saliva was collected from 94 children aged 12-14 years and analyzed for thiocyanate, hypothiocyanite, 'free' and 'total' lysozyme, lactoferrin and secretory IgA. Clinical assessments of the amounts of plaque and gingival inflammation were made, and plaque was collected for determination of dry weight. An inverse relationship was observed between salivary thiocyanate concentrations in both resting and stimulated saliva and the amounts of plaque and gingival inflammation in these subjects ($p < 0.05$). Lactoferrin concentration in stimulated saliva was directly related to the amounts of plaque and gingivitis ($p < 0.05$). 'Total' lysozyme concentration in stimulated saliva was directly related to the amount of plaque ($p < 0.05$), and the 'free' lysozyme concentration in the same saliva was directly related to the amount of gingivitis ($p < 0.05$). The direct relationship observed between clinical measurements and both lysozyme and lactoferrin concentrations in saliva may have been due to contributions from gingival crevicular fluid. Cluster analysis identified three groups of subjects with different profiles in resting whole saliva, and in particular with different levels of secretory IgA. A statistically significant difference was observed in the quantity of plaque collected from subjects in two of these groups ($p < 0.05$). These results from cluster analysis using resting whole saliva from children confirmed the findings of a previous study with young adults.