Periodontal Health Status And Specific Salivary Analysis for Patients with Asthma at Different Treatment Modalities

A Thesis

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Abstract

The prevalence of asthma has been increasing since the 1980 across all ages, genders and racial groups and is higher among children than adults. Given the large number of children, adolescents and adults who suffer from asthma and the lack of consensus on the relation between asthma and periodontal health reported, thus the aim of this study was to determine the periodontal health status of asthmatic adults and non asthmatic control, and to compare different periodontal and salivary parameters.

Our study sample comprised 125 individuals of both sexes; the human individuals were divided into five groups 25 in each group. The groups were:

1. **Group 1**: 25 asthmatic patients on β_2- agonists inhaler [Salbutamol inhaler of dose 100 µg in each puff (Ventolin ®)]
2. **Group 2:**25 asthmatic patients on immunotherapy injection [hyposensetization]
3. **Group3:** 25 asthmatic patients on immunotherapy injection and β_2-agonists inhaler [Salbutamol inhaler of dose 100 µg in each puff (Ventolin ®)]
4. **Group 4:** 25 asthmatic patients on immunotherapy injection , β_2-agonists [Salbutamol inhaler of dose 100 µg in each puffs (Ventolin ®)] and steroid inhaler [Beclomethasone inhaler of dose 50 µg in each puffs (Becotide ®)]

   The asthmatic patients were compared with
5. **Control group :** 25 healthy subjects (13 female, 12 male) matched for age and sex with the asthmatic groups.

The clinical examination involved

1. Collection of stimulated saliva samples and measurement of salivary flow rate.
2. Oral examination consisted of registering the following periodontal parameters, Plaque index (PL.I), Gingival index (G.I), Bleeding on probing (BOP), Probing pocket depth (PPD); and Clinical attachment loss (CAL).

The Biochemical analysis involved colorimetric determinations of salivary calcium and salivary inorganic phosphorus.

The results of the present study showed that the asthmatic patients in all groups had lower salivary flow rate than the control and the difference is highly significant for each asthmatic group when compared with the control ($P < 0.0001$).

The means of **PL.I** were found to be higher than one in all asthmatic groups as well as in the control group. Results from comparing each asthmatic group with the control were found to be significant differences in group 1 and group 4 ($P<0.05$), non significant difference in group2 ($P>0.05$), while highly significant difference in group 3 ($P< 0.0001$).In regard to **G.I**, It was higher in asthmatic patients and the severity of gingivitis was increased significantly in group 2 and group 4 ($P<0.05$), and highly significantly in group 1 and group 3 ($P< 0.0001$) when compared with the control. Also asthmatic patients showed an increase in bleeding sites when compared with the control and the difference is significant in each asthmatic group when compared with the control ($P<0.05$). All asthmatic groups showed higher mean in regard to **PPD** than the control group, and the difference is significant in all asthmatic groups when compared with the control group ($P<0.05$). For CAL each asthmatic group

showed higher mean than the control and the difference is highly significant between each group and the control ($P< 0.0001$).

For salivary calcium, all asthmatic groups showed little differences with no statistically significant differences when compared with the control except for group three that showed significant difference, while for inorganic phosphorus the opposite is correct.

In conclusion patients with asthma are at higher risk for developing periodontal disease which might be due to the disease itself or different treatment modalities in addition to lower salivary flow rate. Therefore a special preventive program is recommended