"ESTIMATION OF C-REACTIVE PROTEIN, WBC AND PLATELET COUNT IN PATIENTS WITH GINGIVITIS AND CHRONIC PERIODONTITIS".

A Dissertation
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ABSTRACT

Background: Periodontal diseases are the diseases affecting the supporting structures of teeth. Plaque being the initiating factor, periodontitis is influenced by a variety of factors. While the primary agent is bacteria, predominantly gram negative anaerobic or facultative bacteria within the subgingival biofilm, the majority of periodontal tissue destruction is caused by an inappropriate host response to those microorganisms and their products rather than directly by the infectious agents.

One of the newer possibility is that poor oral hygiene may cause an increase in the systemic response of inflammatory mediators like white blood cells, platelets, C reactive proteins (CRP), interleukins (IL), matrix metalloproteinase in peripheral blood of periodontitis patients. A mechanism has been proposed that periodontitis will create a burden of bacterial pathogens, inflammatory cytokines, antigens and endotoxins that may contribute to the formation of atherogenesis and thromboembolic events.

Hence this study was designed to estimate and correlate the serum levels of C-reactive proteins, WBC and platelet count in patients with gingivitis and chronic periodontitis with the hypothesis that these inflammatory markers will probably be increased in chronic periodontitis and could be used as markers for atherosclerosis and cardiovascular diseases

Material and methods: The present study was conducted in the Department of Periodontics, A. B. Shetty Memorial Institute of Dental Sciences, Deralakatte, Mangalore. The study consisted of 90 subjects, divided into three groups of 30 patients each. Based on the inclusion criteria, patients were categorized into

group I (healthy), group II (gingivitis) and group III (chronic periodontitis). Serum samples were collected and sent for biochemical analysis to estimate the levels of C-reactive proteins, WBC and platelet count. Results obtained were then statistically analysed using ANOVA test and Tukey post hoc test.

Results: The mean levels of C-reactive proteins, WBC and platelet count was found to be higher in group III when compared to group II and group I and is statistically significant with the p value of <0.001.Pair wise comparison among the groups were done by Tukey Post Hoc Test. The mean difference among the groups was found to be statistically significant in case of C-reactive proteins and platelets. No statistical significant difference was found when WBC levels were compared among group I and group II. But statistical difference was found when group I was compared to group III and group II with group III.

Conclusion: Increase in the levels of C reactive proteins, WBC and platelet counts in periodontitis as seen in this study could indicate the emergence of reliable biomarkers for detection of periodontal disease as well as cardiovascular diseases. The positive correlation with these inflammatory markers in periodontal disease might be a possible causal pathway in linking the connection between periodontitis and risk for cardiovascular diseases in these patients. Within the limitation of the study, it can be speculated that periodontitis may predispose patients to risk for atherosclerosis and cardiovascular diseases.

Keywords: C-reactive proteins, WBC count, platelet count, Periodontitis