



**“COMPARATIVE ASSESMENT OF SALIVARY LDH ISOENZYME LEVELS
IN NORMAL, GINGIVITIS AND PERIODONTITIS SUBJECTS”**

By

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ABSTRACT

Introduction: Salivary total Lactate Dehydrogenase (LDH) enzyme is identified as biomarker for the diagnosis and progression of Periodontitis but association between its five Isoenzymes with periodontitis is yet to be explored. The aim of the study is to evaluate the relation between salivary LDH isoenzymes and Healthy, Gingivitis and Periodontitis. **Methodology:** 60 subjects belonging to three groups (20/gp): Periodontitis, Gingivitis and Healthy; were enrolled based on Community Periodontal Index (CPI). Unstimulated whole saliva for estimating total LDH and Isoenzymes levels were studied by electrophoresis followed by clinical examination (CPI, Gingival Index (GI), Sulcular Bleeding Index (SBI) at baseline and 1month. At 1 month, subjects underwent oral prophylaxis and were recalled post intervention after 15 days. Data was statistically analysed (Freidman's test, Repeated measures ANOVA, Wilcoxon signed rank, $p < 0.05$). **Results:** ✓ Mean difference in GI and SBI at all three intervals in three groups; CPI in periodontitis group was statistically significant ($p < 0.05$). There was increasing trend in LDH Isoenzymes from baseline to 1 month in healthy and gingivitis, but a declining trend in periodontitis and the values decreased post intervention in all groups. The difference in the Total LDH, LD4, LD3 and LD2 values at baseline, 1 month after baseline and post intervention in healthy subjects was statistically significant ($p = 0.006$, $p = 0.001$, $p = 0.01$ and $p = 0.007$ respectively). In gingivitis, difference in LD1 values was statistically significant at all three intervals ($p = 0.01$). Among Periodontitis, difference in Total LDH, LD5 and LD4 values at three intervals was found to be statistically significant ($p = 0.04$, $p = 0.02$ and $p = 0.02$ respectively). A

significant but moderate correlation was seen in gingivitis between SBI and LDH2 ($r=0.5$, $p=0.03$) at baseline and between CPI and LDH1 at post intervention($r=0.4$, $p=0.04$). In the periodontitis group at post intervention, there was a strong, positive correlation between PI and LD 4, which was statistically significant. ($r= 0.472$, $p= 0.048$) Similarly, CPI showed strong, positive correlation with Total LDH ($r= 0.486$, $p= 0.041$), LDH 5 ($r= 0.515$, $p= 0.029$), LDH 4 ($r= 0.508$, $p= 0.031$) and LDH 1 ($r= 0.486$, $p= 0.041$). **Conclusions:** Total LDH and Isoenzymes values reflect inflammation and periodontal destruction at baseline which reduced significantly after intervention signifying positive correlation. Salivary LDH Isoenzymes may be used as a biomarker to diagnose periodontitis. Further studies with bigger sample are required to explore in this direction.

Keywords: Saliva, LDH, LDH Isoenzymes, Periodontitis