SDM
College of
Dental Sciences
& Hospital

# BIOMARKERS IN ORTHODONTICS

By

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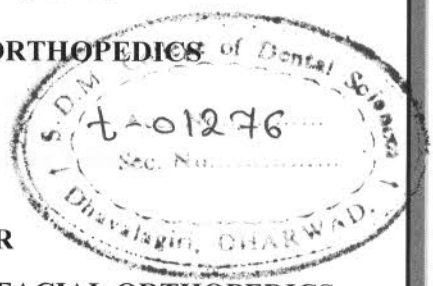


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## Abstract

Background: Biomarkers are - quantifiable criteria of biological processes that provide indications objectively. During the orthodontic procedure, the analysis of Saliva/ Salivary fluid may be examined to monitor biological process/ progress. Pain and discomfort are inexorable for a patient during an orthodontic treatment.

The effectiveness of the orthodontic treatment could be improved if there is a feasibility to speculate the result of the orthodontic forces and biologically monitor them. Then management of the appliances could be based on an individual tissue response. Assessing the pain objectively and the outcome of biomechanical therapy using salivary physiological biomarkers would benefit the clinician in appropriate pain diagnosis and management. Unavailability of an accepted collection procedure of saliva, even though well accepted by patients, its consideration as a biomarker in any biochemical process is neglected.

Methodology: Literature search was made in databases, like PubMed, Google Scholar, Cochrane library, Medline, Web of Science, Scopus and EMBASE for relevant studies. Publication in English till date which estimated Gingival Crevicular Fluid and salivary indicators of orthodontic tooth movement, root resorption and pain were included.

Results: All biomarkers available till date were compiled in detail and discussed in the present dissertation.

Conclusion: Several sensitive salivary biomarkers are present that are of biological significance in orthodontic procedures. Further focussed research would be crucial to substantiate the robustness of these biomarkers to assess the pain experienced by the patients during orthodontic procedure.

**Keywords:** Fixed Orthodontic Therapy, molecular Biomarkers, Saliva, GCF, objectivity.