

**“ESTIMATION AND COMPARISON OF Wnt5a IN GINGIVAL  
CREVICULAR FLUID IN PERIODONTAL HEALTH AND DISEASE –  
A COMPARATIVE CROSS SECTIONAL  
CLINICO-BIOCHEMICAL STUDY”**



**By**

**Dr. Mahwish Rizwan**

**Dissertation submitted to**

**Rajiv Gandhi University of Health Sciences, Bangalore, Karnataka.**

**In partial fulfilment of the requirements for the degree of**

**MASTER OF DENTAL SURGERY**

**In**

**PERIODONTICS AND ORAL IMPLANTOLOGY.**

**2017-2020**

**Under the guidance of**

**Dr. Leena Shettar**

**Professor**

**Department of Periodontics and Oral Implantology**

**S.D.M. College of Dental Sciences & Hospital, Dharwad**

---

**Department of Periodontics and Oral Implantology  
S.D.M. COLLEGE OF DENTAL SCIENCE AND HOSPITAL,  
DHARWAD.**

## **ABSTRACT**

**Title:** Estimation and comparison of Wnt5a in gingival crevicular fluid in periodontal health and disease – A comparative cross sectional Clinico-biochemical study.

**Background and Objectives:** Wnt5a is a cysteine-rich ligand secreted by activated antigen presenting cells and by synoviocytes from rheumatoid arthritis joints and atherosclerotic lesions. Increased expression of Wnt5a expression in human gingival fibroblasts, human gingival epithelial cells and gingival tissue samples is noted in subjects with chronic periodontitis. The aim of this study was to identify, quantify and compare the levels of WNT-5a in GCF in subjects who were healthy and who had periodontitis

**Methods:** Eighty subjects were divided into two groups of 40 subjects each.

Group-1: Subjects who were periodontally and systemically healthy

Group-2: Subjects who were having CP, but were systemically healthy.

The GI, PI, PPD, and CAL were recorded and GCF samples were collected. They were stored at  $-80^{\circ}\text{C}$  and were then analyzed using an ELISA kit.

**Results:** The mean PI scores of CP group [ $1.93 \pm 0.22$ ] was higher as compared to the healthy group [ $0.51 \pm 0.14$ ]. GI scores were significantly higher in CP [ $2.03 \pm 0.29$ ] when compared to healthy group [ $0.48 \pm 0.15$ ]. The Probing Pocket Depth (PPD) results showed higher values of PPD in CP [ $7.00 \pm 0.57$  mm] when compared to healthy group [ $2.31 \pm 0.41$  mm]. Similarly, Clinical attachment loss (CAL) values were higher in CP group [ $7.82 \pm 0.63$  mm] when compared to healthy group [ $2.31 \pm 0.41$ mm] and was found to be statistically significant. Group-2 exhibited statistically significant higher

levels of Wnt-5a when compared to healthy participants; CP Group [ $1.48 \pm 0.23$  ng/ml], healthy [ $1.03 \pm 0.28$  ng/ml]. WNT5a showed a positive correlation with all the clinical parameters.

**Interpretation & Conclusion:** The GCF levels of WNT5a was increased in patients with periodontitis.

**Keywords:** Wnt5a; periodontitis; GCF.