

ABSTRACT

Introduction: Platelet Rich Fibrin is a polymerized fibrin matrix in a tetra molecular structure with >97% of the platelets, cytokines, leukocytes & circulating stem cells. Titanium prepared platelet-rich fibrin (T-PRF) has stronger and thicker fibrin than that of the classic glass tube prepared platelet-rich fibrin which is important release of growth factors. It is based on simple strategy of enhancing healing capacity of natural blood clot by supplementing the natural blood clot with growth factors. Various factors that influences the fibrin network pattern of PRF & T PRF are genetic factors, and systemic factors.

Aim and Objective: To compare fibrin network pattern changes of platelet rich fibrin and titanium prepared platelet rich fibrin in healthy, gingivitis and Generalized Chronic Periodontitis and Generalized Aggressive Periodontitis patients by histological analysis

Materials and Methods: A total of 60 patients were divided into Group A: healthy, Group B: gingivitis; and Group C Generalized Chronic Periodontitis and 10 patients Group D Generalized Aggressive Periodontitis. PRF and T-PRF was prepared from blood samples of all patients and were subjected to cell block cytology method of histological analysis and slides were prepared to histologically assess the changes in (i) fibrin network patterns in terms of density and (ii) entrapment of platelets and white blood cells (WBCs) within fibrin meshwork.

Results: Healthy and Gingivitis showed no significance variations in fibrin matrix formation in the PRF group, and in Generalized Chronic Periodontitis and Generalized Aggressive Periodontitis patients more cellular entrapment, matrix formation was found and in TPRF clots in all groups showed thick dense fibrin matrix and well organized fibrin border and increased entrapment of cellular components and this was more exaggerated in generalized chronic and aggressive periodontitis patients.

Conclusion: From this study it can be interpreted that periodontal diseases can be considered as one of the influencing factors on quality of PRF and T-PRF in terms of fibrin network patterns and hence, platelet and WBCs entrapment within these fibrin networks.

Key words: Platelet Rich Fibrin, Titanium Prepared Platelet Rich Fibrin, Fibrin Matrix Pattern, Periodontitis.