Not just repair, it regenerates : PRF

Madhur Garg¹, Kishan Agarwal², Praveen Singh Samant³, Shobhit Pratap Singh⁴

¹-⁴Department of Conservative Dentistry and Endodontics, Saraswati Dental College and Hospital, Lucknow, Uttar Pradesh, India.

**Commentary:**

Regenerative dentistry is a gripping and developing field and has been recommended as a paradigm shift in the management of oral wounds. The growing clinical interest to accelerate the healing kinetics using platelet derived products has led to the evolution of platelet derived concentrates. A new genera of platelet concentrates called "Platelet Rich Fibrin (PRF)" has been chronicled as an impetus in the therapeutic modality for dental diseases with its application in diverse disciplines in dentistry and more recently in Regenerative Endodontics and Endodontic Emergencies. Choukroun et al. first described PRF; has upped the ante in wound healing by providing 100% biocompatibility and acting as a natural scaffold enriched with growth factors for restoration and reconstitution of the lost architecture and function of tissues be it periodontal, periapical or be it bone regeneration. First application of PRF was done to improve bone healing in cases of implants. PRF is prepared by centrifuging a blood sample at 3000rpm for 10 min in a glass or glass coated plastic test tube. The resultant product consists of cellular plasma, PRF and RBCs. The middle layer of PRF clot is separated from the underlying RBCs and transferred on a sterile dish. The derived PRF is a concentrate of white blood cells, platelets, and fibrin. The fibrin matrix is composed of platelet cytokines, growth factors and cells which are released after a certain time and serve as a resorbable membrane. The mitogenic response in the periosteum for tissue repair is stimulated by the growth factors during normal wound healing process. These fibrin sealant properties and growth factors in platelets combined together provide an ideal base for healing of wounds and regeneration of tissues. It helps in accelerating the healing by prolonging the release of growth factors at the wound site, proliferation of fibroblasts and osteoblasts, promoting angiogenesis, inducing collagen synthesis, trapping the circulating stem cells and regulating the immunity, thus, making its application widespread. It is a biomodulator and has been shown to promote both hard and soft tissue healing without significant post-surgical inflammation.

PRF has found its application in various fields of dentistry some of which are: management of extraction sockets, as a graft material for sinus elevations, for soft-tissue root coverage and for guided periodontal regeneration. Studies have proved it to be an excellent scaffolding material for management of diseased necrosed immature tooth for pulpal revival and tooth revitalization. Owing to its osteogenic potential, active research is also going on its application as a pulpotomy agent, and in surgical management of periapical lesion. These all above mentioned applications have become a reality owing to its advantage of being autologous in nature, easily accessible, presence of abundant growth factors, increased healing kinetics of the grafted bone and economical as compared to the earlier used graft materials.

Platelet concentrates thus have a great scope in the field of reconstructive and regenerative medicine and dentistry. It is newer, safer and simpler than the previous Platelet Rich Plasma concentrates hence they have found a wide and easy application in clinical dentistry practices of the contemporary era.
References


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Corresponding Author:
Kishan Agarwal,
Department of Conservative Dentistry and Endodontics,
Saraswati Dental College and Hospital,
Lucknow, Uttar Pradesh, India.
Email id: kishan25021991@gmail.com