

1133 Preparation and Assessment of Platelet Rich Plasma for Periodontal Surgery

S. JAIN, [L.J. JIN](#), and E.F. CORBET, University of Hong Kong, Hong Kong

Platelet Rich Plasma (PRP), which is obtained by differential centrifugation of a patient's own blood, has recently been used in oral and maxillofacial, plastic, and periodontal surgery. PRP should have a platelet concentration of 500% above whole blood levels, as it is this concentration which has been shown to enhance bone and soft tissue healing. **Objectives:** To prepare PRP in a general purpose centrifuge and assess its platelet count and growth factor levels. **Methods:** 14 subjects with chronic periodontitis needing open flap debridement surgery. Prior to surgery 30 ml of the patient's blood was obtained by venipuncture and this was processed in a general purpose centrifuge (Beckman J6 MI, Florida, USA). Whole blood was centrifuged at a first spin of 700 rpm (120G) for 20 minutes and this separated the red blood cells from the plasma. This plasma was centrifuged again at 1750 rpm (800G) for 15 minutes to yield 3 ml of PRP at the bottom with platelet poor plasma (PPP) at the top. Growth factor analyses for platelet derived growth factor (PDGF-AB) and transforming growth factor ($TGF\beta_1$) in the PRP were performed as per standard protocol using enzyme linked immunosorbent assay (ELISA) kits. **Results:** The mean platelet count was $1144140 \pm 573020/\mu\text{l}$ which represented an increase of 596% above baseline ($p < 0.001$). PDGF-AB was increased by 309% above baseline ($p < 0.001$) and had a mean value of $99.10 \pm 32.76 \text{ ng/ml}$. $TGF\beta_1$ was increased by 373% above baseline ($p < 0.001$) with a mean value of $168.17 \pm 91.45 \text{ ng/ml}$. **Conclusions:** Platelet Rich Plasma (PRP) of adequate quality for surgical use, containing high levels of platelets and growth factors, can be obtained by using a general purpose centrifuge.

[Seq #118 - Bioengineering – Mediators and Cells](#)

10:15 AM-11:30 AM, Thursday, 11 March 2004 Hawaii Convention Center
Exhibit Hall 1-2

[Back to the Periodontal Research - Therapy Program](#)

[Back to the IADR/AADR/CADR 82nd General Session \(March 10-13, 2004\)](#)