

PLATELET RICH PLASMA (PRP): WHAT ARE WE REALLY ADMINISTERING TO OUR PATIENTS?



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BACKGROUND

Platelet rich plasma (PRP) has been shown to clinically accelerate healing of both soft and hard tissues although its analgesic and antiinflammatory (AA) activity yields in its concentration on blood-cell counts and certain grown factors. In 2013 (PRP) changed its condition and acquire the consideration of “medicine” by drug authorities.

PURPOSE

We sought to describe and analyze our PRP prepared in our facilities.

MATERIAL AND METHODS

Following GMP guidelines, PRP was manufactured under open technique. 100g for 10 minutes conditions were applied. For each patient, 70 ml of peripheral blood were extracted and 14ml of PRP was obtained.

Cell counts and the contents of vascular endothelial growth factor (VEGF), platelet-derived growth factor AB (PDGF-AB), transforming growth factor beta 1 (TGF- β 1), Interleukin beta 1 (IL-1 β) and Insulin growth factor (IGF) concentration of growth factors in PRP were analyzed.



Table 1. Peripheral Blood sample and PRP composition

| <i>Peripheral Blood</i> | Median | Desv. típ |
|--|-----------|-----------|
| Hematías ($\times 10^6 / \mu\text{l}$) | 4,67 | ,46 |
| Hemoglobina (g/dl) | 13,81 | 1,41 |
| Hematocrito (%) | 42,57 | 3,93 |
| Leucocitos ($\times 10^3 / \mu\text{l}$) | 7,33 | 1,68 |
| Plaquetas ($\times 10^3 / \mu\text{l}$) | 261,53 | 78,97 |
| <i>Platelet-rich Plasma</i> | | |
| Hematías ($\times 10^6 / \mu\text{l}$) | ,053 | ,02 |
| Hemoglobina (g/dl) | ,059 | ,11 |
| Hematocrito (%) | ,289 | ,15 |
| Leucocitos ($\times 10^3 / \mu\text{l}$) | 3,870 | 2,11 |
| Plaquetas ($\times 10^3 / \mu\text{l}$) | 586,216 | 153,20 |
| IGF (ng/ml) | 75,031 | 32,48 |
| PDGF AB (pg/ml) | 17888,097 | 7475,56 |
| TGF β -1 (Pg/ml) | 33484,448 | 20595,47 |
| VEGF (pg/ml) | 553,417 | 2052,27 |
| IL1 β (pg/ml) | 230,000 | 1884,55 |

RESULTS

74 patients were included. In Table 1. Peripheral Blood sample and PRP composition is shown.

Concentration and percent recovery were 2.28 [2.15-2.36] and 45.6 [43.15-47.14] for platelets; .45 [.39-.6] and 9.17 [7.83-11.93] for White-cell; and .01 [.01-.01] and .22 [.18-.29] for red-cells were respectively

CONCLUSIONS

We obtained high concentration and percent recovery rates of platelets, pre-selected grown factors related with the AA effect while poor rates for the rest of blood-cells describe in literature as desired composition of PRP.

