Does Platelet Rich Plasma Composition Mathers in Hip Osteoarthritis?

Villanova-López MDM; Nuñez-Nuñez M^2; Murillo-Izquierdo M^4; Garcia-Donaire J; Álvarez R^2; Sandoval S^4; Camean M^4.

Hospital Hospiten Estepona. Estepona (Spain) 1. Hospital Universitario San Cecilio. Granada (Spain) 2. Hospital Ochoa. Marbella (Spain) 3. Hospital Universitario Virgen Macarena. Sevilla (Spain) 4.

**Background**
Analgesic and antiinflammatory (AA) activity of autologous Platelet rich plasma (PRP) yields in its concentration on blood-cell counts and certain growth factors. Although, clinical correlation is poor described.

**Purpose**
We sought to analyze clinical outcomes and its with growth factors and blood cell concentration of PRP.

**Material and Methods**
Cohort study of adult patients with Hip Osteoarthritis who had failed previous conservative treatment and received a single intraarticular injection of autologous Platelet Rich Plasma (PRP) for pain management. Follow-up period: 1 year with clinical evaluations at baseline (day of PRP administration) and at 1, 4, 24, 48 weeks. Primary outcome: measure was a change in Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and secondary outcomes: Harris Hip Score (HHS), Visual Analog Scale (VAS), responders’ rate (OARSI Criteria), analgesic treatment, Cell counts and the contents of vascular endothelial growth factor (VEGF), platelet-derived growth factor AB (PDGF-AB), transforming growth factor beta 1 (TGF-b1), Interlekin beta 1 (IL-B1) and Insulin growth factor (IGF) concentration of growth factors in PRP. Uni and multivariate analyses were performed using SPSS v.18.

**Results**
38 patients were included. A better response to treatment was observed in those patients with a baseline grade 1 -2 of Kellgren Lawrence (11.51 OR, IC 95% 2.34-50.65, p<0.03). Significant high correlation was found between white cells concentration-VAS score (r=0.748, p<0.013) and white cells consecervation-WOMAC stifness (r=0.748, p<0.013). Moreover, moderate correlation was found between ILβ1-HHS (r=-0.38, p<0.042), ILβ1-VAS score (r=0.452, p<0.018) and ILβ1 and WOMAC score (r=0.441, p<0.021). In responders, we found a moderate negative correlation between PDGF and VAS score (r=-0.446, p<0.012) and PDGF and WOMAC score (r=-0.39, p<0.037).

**Conclusions**
Results indicated an unique intra-articular PRP injection offers a clinical improvement in patients with hip OA with correlation between growth factors and cell concentration and clinical results.