

ABSTRACT NUMBER: 1323

Autologous Conditioned Serum and Plasma Rich in Growth Factors Show Stronger Evidence of Efficacy Than Other Kinds of Platelet-Rich Plasma

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SESSION INFORMATION

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Session Type: Poster Session (Monday)

Session Title: Osteoarthritis – Clinical
Poster I

Session Time: 9:00AM-11:00AM

Background/Purpose: While there is growing evidences for the efficacy of platelet-rich plasma (PRP), there is still no standardized composition. There are 3 major types of PRP: Leukocytes Rich (LR), Leukocytes Poor (LP), and Autologous Conditioned Serum (ACS) or Plasma Rich in Growth Factor (PRGF) which are without any cells. Since 2014 no meta-analysis tried to compare separately the different type of PRP. The purpose of this meta-analysis was to compare separately each kind of PRP versus hyaluronic acid (HA) for osteoarthritis (OA) to find if one of them stands out.

Methods: Randomized Controlled Trials (RCTs) at least single blinded, comparing the use of PRP an HA for OA were retrieved from PubMed, Cochrane, Embase until May 2019 and from abstracts of EULAR and ACR congresses for the last 3 years. We chose the most used follow-up time, which was 6 months. Two readers extracted the Western Ontario and McMaster University Arthritis Index (WOMAC) and any other pain scale, and adverse events. The pooled data were analyzed with Review Manager 5.3.5.

Results: 1139 results were screened, 24 RCTs met the inclusion criteria, and only 16 were enough detailed to be meta-analyzed. The present meta-analysis indicated that only PRGF/ACS and LP PRP reduced significantly the WOMAC score compared with HA. The WOMAC was reduced by 5.24 points with LP-PRP and 11.82 points with ACS/PRGF (Fig.1). Concerning the pain scales only the ACS/PRGF group shown a significant difference versus HA (Fig.2). We found no link between injected platelet quantity and WOMAC index.

Conclusion: ACS/PRGF have stronger evidence of efficacy than LP or LR PRP. These results are consistent with the theoretical models explaining the ways of action of PRP. Numbers of authors theorizes that anti-inflammatory cytokines contained in the platelets (like IL-1ra, TGF- β , IL-10) are responsible for the effect of PRP, while leukocyte (containing pro-inflammatory cytokines and metalloproteases) are harmful for the cartilage. The principal limit of this meta-analysis is the heterogeneity of the studies probably due to the absence of standardization of PRP, indeed

inside this 3 subgroups, the preparations can still differs by the platelet concentration, the activation of platelet -chemical, physical or unactivated- or the injection scheme . No conclusion can be drawn about the superiority of one kind of PRP since we lack face to face studies.

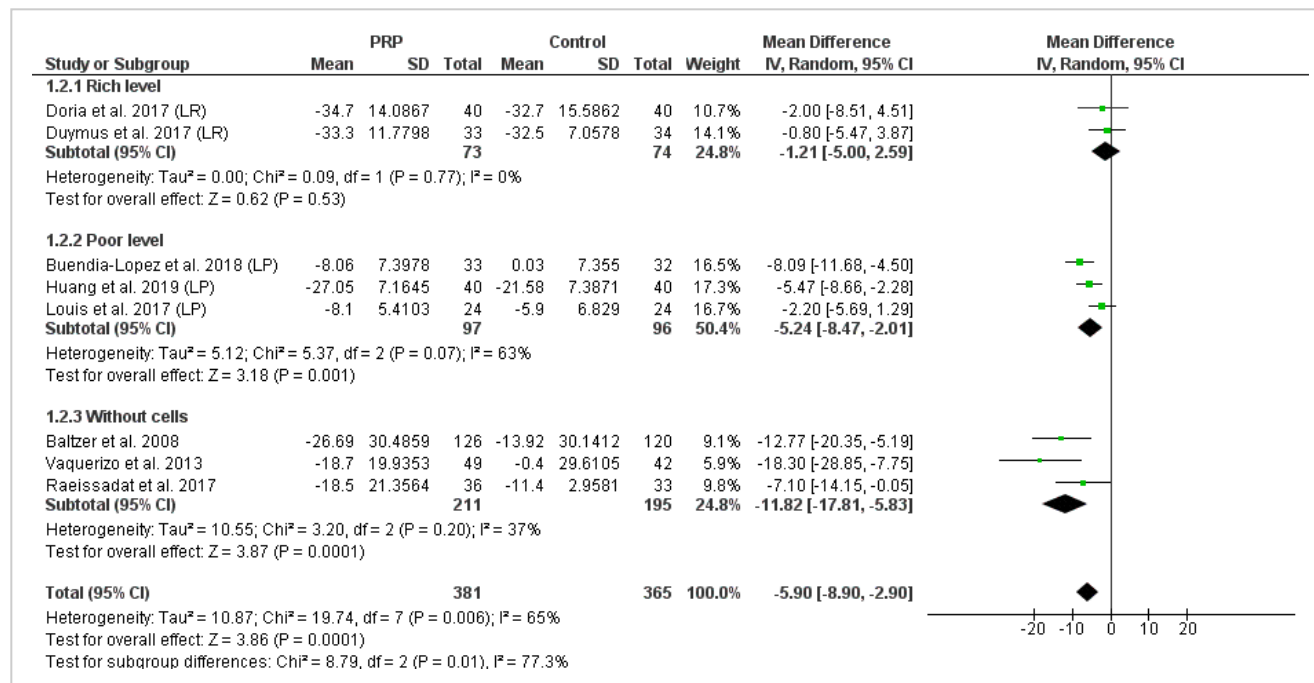


Figure 1: WOMAC changes at 6 months in different subgroups of PRP versus HA

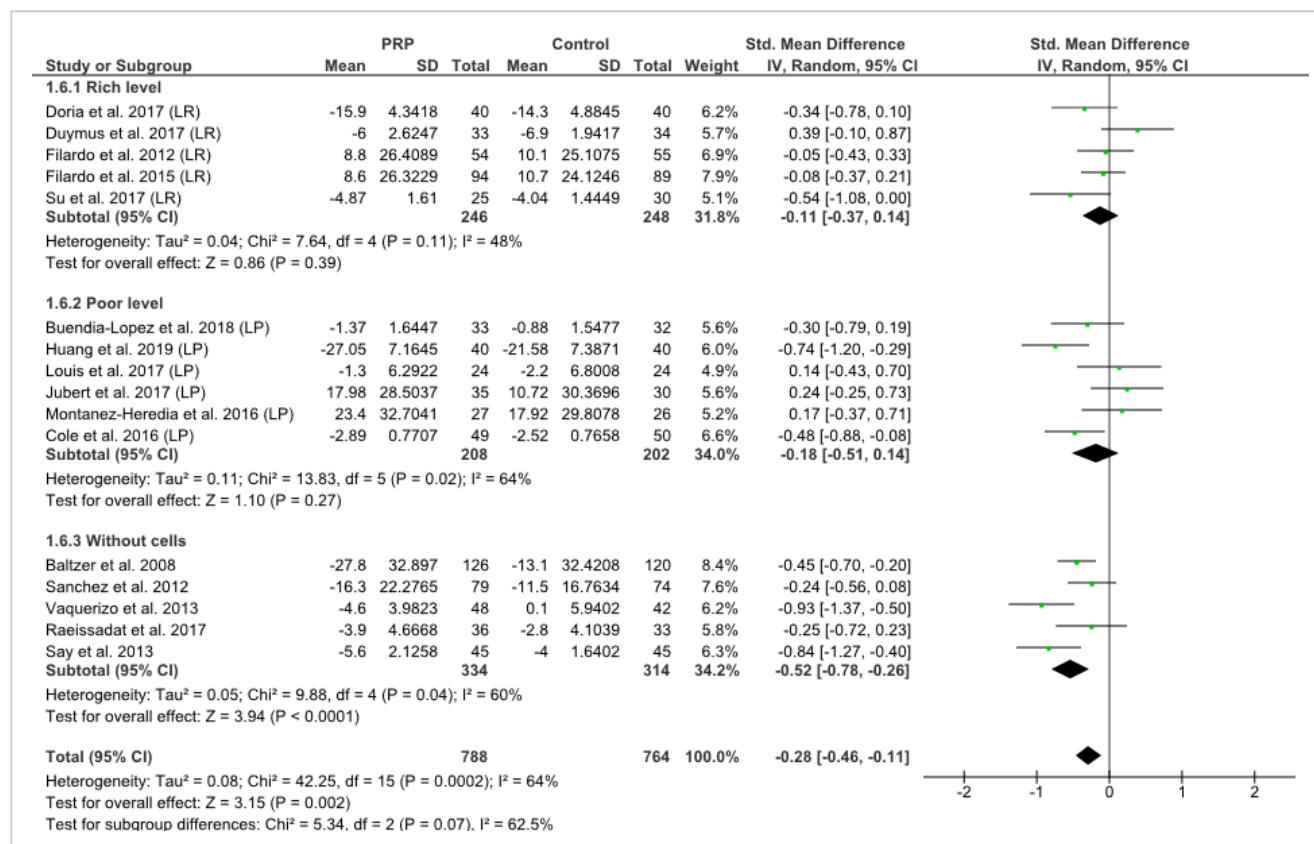


Figure 2: Standardize mean difference of pain scales at 6 months in different subgroups of PRP versus HA



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