Intraosseous injection of Platelet Rich Plasma for the treatment of severe knee osteoarthritis: a case-control study

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PURPOSE
Platelet Rich Plasma (PRP) has emerged as a promising alternative to conventional treatment for knee osteoarthritis (KOA). However, this efficacy is limited in severe KOA.¹ After a pilot study that showed the safety and efficacy of this technique,² the aim of this study was to confirm the clinical effectiveness of intrasosseous PRP respect to a control group (intraarticular PRP) in patients with severe KOA.

METHODS
An observational case-control study using intraarticular (IA group) infiltrations of PRP as a control group was conducted. Each group included 30 patients with severe KOA, matched according to age, sex, body mass index and radiographic severity (III and IV degree according to Ahlbäck scale). Patients of both groups received three IA infiltration of PRP on a weekly basis. In addition, patients of the IO group underwent during the first treatment two additional intraosseous infiltrations into subchondral bone, one in the medial femoral condyle and one in the tibial plateau.³ Clinical outcome was evaluated using the Knee Injury and Osteoarthritis Outcome Score (KOOS) questionnaires performed prior to treatment and 6 months after the treatment.

RESULTS
Both groups did not differ with respect age, sex, body mass index and radiographic severity (Table 1). The percentage of patients with significant clinical improvement in KOOS Pain subscale was higher in the IO group (53.33%) than in the IA group (26.66%) (p=0.035). The increase in Pain score was also significantly higher in IO group patients (12.44) compared with the IA group (2.48) (p=0.021). The combined treatment of intraosseous with intraarticular injections also proved to be significantly better than the intraarticular injections alone in the difference from baseline in Symptoms and Function in sport and recreation (Sport/Rec). In addition, patients of the IO group showed significant improvements in all KOOS subscales six months after treatment, in contrast to patients of the IA group.

CONCLUSIONS
Although a lot of work still has to be done, these results provide useful information about the clinical efficacy of intraosseous infiltrations of PRP in patients with severe KOA, and open new perspectives on additionally targeting subchondral bone to treat knee OA.

REFERENCES