(score 3, range 1.5-15), and sclerotic SB area was higher in the Med condyles (64.3 ± 7.0 vs $27.6 \pm 7.4\%$, $p < 0.05$). CD271+ MSCs were found in bone-lining and perivascular locations, and accumulated in the areas of vascular invasion into the articular cartilage in both, Med and Lat condyles. No differences in the MSC numbers were found using CFU-F assay (1.4 ± 0.7 and $1.6 \pm 0.8\%$ of total cells in Lat and Med condyles, respectively), or by flow cytometry (4.4 ± 3.9 and $5.9 \pm 6.8\%$, respectively). MSCs had similar PD and trilineage capacities *in vitro*. Out of 95 genes tested, 3 genes were significantly upregulated in Med condyle CD271+ MSCs: GREM1 (lateral MSCs below detection), PTHLH (2.4-fold, $p = 0.02$) and STMN2 (10.5-fold, $p = 0.02$), all implicated in osteogenic differentiation and mineralisation (6, 7, 8).

Conclusion: Upregulation of ossification-related genes in Med condyle MSCs suggest their potential contribution to sclerotic plate formation and OA severity. Further work is needed to establish if biomechanical or biological stimulation of these MSCs can result in GE modulation in preference of cartilage tissue formation and subchondral bone restoration.

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AB0099

COCULTURE OF SYNOVIAL MEMBRANE AND CARTILAGE: A POTENTIAL HUMAN EX VIVO CARTILAGE DEGRADATION MODEL

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Background: Cartilage degradation is a hallmark in both osteoarthritis (OA) and rheumatoid arthritis (RA). Ex vivo cartilage models offer the potential to study disease processes but are surprisingly rarely used.

Objectives: Here we investigate the effect of synovial tissue and stimulation with TNF- α on cartilage degradation in a physiologically relevant coculture-model of synovial membrane and cartilage.

Methods: Cartilage and synovial membrane were collected from patients with RA and OA who underwent joint replacement. Cartilage was cultivated either alone or with synovial membrane in medium with or without TNF α as a stimulant for up to 28 days. The explants were harvested at different time points and Safranin-O-staining was performed to visualize proteoglycan (PG) content. A scoring system from 0 (no PG content) to 3 (high PG content) was applied as a semi-quantitative measure for evaluation. Linear mixed modeling adjusted for gender and age was performed to identify factors influencing PG content.

Results: Samples of 18 patients (9 OA, 9 RA) were collected. Factors associated with proteoglycan loss in cartilage were the time in culture ($p = 0.02$), stimulation with TNF- α ($p = 0.0007$) and coculture with synovial membrane ($p = 0.00002$) in univariate analysis with TNF- α ($p = 0.0009$) and coculture ($p = 0.001$) maintaining the level of significance in multivariate analysis. (Figure 1)

Conclusion: Exposure to synovial tissue and TNF stimulation drive cartilage proteoglycan loss in an ex vivo cartilage degradation model. This model may prospectively serve to investigate pathophysiologic pathways of cartilage degradation in both OA and RA.

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None

Figure 1. Proteoglycan content at d38. PG, proteoglycan.

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AB0100

COMPARATIVE ANALYSIS OF THE EFFECTIVENESS AND TOLERANCE OF INTRA-ARTICULAR INJECTION OF PLATELET RICH PLASMA VS HYALURONIC ACID AND NON-ARTHROSCOPIC JOINT LAVAGE IN PATIENTSWITH KNEE OSTEOARTHRITIS

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Background: Knee Osteoarthritis (KOA) is a common condition associated with pain and morbidity. The impact of this pathology makes it necessary to develop new procedures for joint regeneration. Regenerative treatments such as platelet-rich plasma (PRP) are being proposed as a safe alternative, capable of regenerating damaged tissues and improving the quality of life, reducing the need to surgical procedures (1-4).

Objectives: To compare the effectiveness of PRP treatment vs Hyaluronic Acid (HA) and Non-Arthroscopic Joint Lavage (NAJL) in patients with KOA.

Methods: It was performed a prospective, 3-months observational study of 51 patients with KOA, from the OA clinic of the Reina Sofía Hospital of Córdoba. Patients were treated according to clinical practice in 1 of the 3 treatment arms (PRP, HA, NAJL). Pain and disability were evaluated using Visual Analogue Scale (VAS) of joint pain, WOMAC and OARSI. We compared the baseline data using simple ANOVA and chi-squared tests and the intra- and inter-group differences before and after treatment (0, 1 and 3 months) using the mixed ANOVA test. All comparisons were bilateral considering $p \leq 0.05$ as a significant result.

Results: 51 patients were enrolled, of which 52.9% were female. The average age ($\pm$ SD) was 58.47 ± 7.48 years. The average Body Mass Index (BMI) was 30.64 ± 4.25 Kg/m². Characteristics at baseline were comparable among the 3 treatment groups (Table 1). An overall improvement was observed during the follow-up in the PRP group in terms of pain and disability with respect to the baseline, with a VAS MD of -3.00 [95% CI, -4.79 to -1.21] in the first month and -3.08 [CI 95%, -4.79 to -1.38] at 3 months ($p < 0.001$), a MD WOMAC of -18.83 [95% CI, -30.62 to -7.05] ($p = 0.001$) in the first month, and a MD of OARSI of -19.32 [95% CI, -34.26 to -4.37], ($p = 0.008$) in the first month and -18.94 [95% CI, -36.81 to -1.07] at 3 months ($p = 0.035$). In addition, the PRP group was superior to the HA group, showing a significant improvement in the VAS at 1 and 3 months ($p < 0.005$) and compared to the NAJL group, PRP showed better results in the WOMAC throughout the follow-up ($p < 0.01$) and in the OARSI at 3 months ($p = 0.013$).

Conclusion: Based on our results, the intra-articular infiltration with PRP could therefore constitute a safe and effective treatment option in KOA patients, with short-medium term results superior in terms of pain and disability to conventional treatment with HA and NAJL.