were randomly divided in 4 groups: in 1st and 2nd grs. 10 animals received 3 intra-articular injections of PAP (on 5th,7th,14th day after knee trauma) as a control (gr.3 and 4) 10 rabbits received 3 intra-articular injections of 0,9% NaCl at the same days after trauma; histopathology was performed at 45th (1st and 3rd gr.) & at 90th day (2nd and 4th gr.) after trauma. 146 patients - 58 men (39.7%) & 88 women (60.3%), were divided into 2 grs. Gr.1 included 68 patients who consented to receive standard OA treatment and 3 weekly intra-articular injections of PAP (total 2 courses in 12 months) (plasma volume 12–15ml/course, total platelets number per injection 1260,24±22,1x10^9); Gr.2 consisted of 78 patients with the same diagnosis who received only standard OA treatment (non-steroidal anti-inflammatory drugs, physiotherapy, exercises). Both groups were of comparable age, gender and initial WOMAC data (Gr.1 40,9±0,7 Gr.2 39,7±0,9, $p>0,05$). WOMAC scale parameters were analyzed before treatment and after 3 weeks; 6 & 12 months after course of treatment in both groups.

Results: In animals histopathology has found better repair, ↓ inflammation, better structure of the knee cartilage after PAP injections comparing with the control groups animals; in addition in 3rd group of rabbits ↓ signs of early posttraumatic osteoarthritis were found (comparing to 4th gr.).

Clinical study demonstrated better changes in pain, stiffness and function in 3 weeks after treatment in patients of Gr.1 comparing to Gr.2 (WOMAC had decreased by 35.8% in Gr.2 and by 74.1% in Gr.1), $p<0,05$.

After 6 months of follow-up (before 2 course of PAP treatment), the mean number of OA exacerbations was (0,7±0,02) in Gr.1 & (1,6±0,04) in Gr.2 ($p<0,05$) and general WOMAC index in Gr.1 was significantly lower than in Gr.2 (accordingly (22,8±0,3) and (36,5±0,8); $p<0,05$).

In the next 6 months again patients in Gr.1 had less exacerbations (0,51±0,03) then patients in Gr.2 (1,4±0,03),$p<0,05$; & better WOMAC performance (Gr.1-(17,5±0,6 & Gr.2–37,1±0,5 accordingly,$p<0,05$).

Conclusions: 1. Histopathology of the knee cartilage has shown promising results concerning possibility of cartilage repair after trauma and prophylaxis of the early posttraumatic OA after PAP injections in animal model.

2. Repeating intra-artricular injections of PAP, added to the standard care in knee OA improves functional activity, reduces pain and number of OA exacerbations in 12 months of follow up.

3. The further studies (both experimental and clinical) are needed to obtain more accurate information and determine the most effective methods of PAP use in OA patients.

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SAT0527 ASSESSMENT OF SHORT-TERM EFFECTIVENESS OF FIVE LOCAL TREATMENT MODALITIES IN PATIENTS WITH SYMPTOMATIC KNEE OSTEOARTHRITIS

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Background: Inside the therapeutic algorithm of knee osteoarthritis (OA) it is included the Non-Arthroscopic Joint Lavage (NAJL) since around 1934 Burman reported that arthroscopies improved the symptoms. Current medical treatment strategies are aimed at pain reduction and symptom control rather than disease modification (1). The large variety of potentially interventions available has raised the need to assess their effectiveness.

Objectives: To compare the short-term effectiveness among five treatment strategies in patients with symptomatic knee OA.

Methods: An open, controlled, randomized prospective study involving 150 patients of whom 76.7% were females. The average age was 65.37±8.35. Patients had knee OA according to American College of Rheumatology criteria, with Kellgren-Lawrence radiographic grades II-III. They were randomly assigned to five groups of treatment, 1)NAJL (n=30), 2)NAJL+hyaluronic acid (HA) (n=32), 3)NAJL+ corticosteroid (CS) (n=32), 4)HA (n=31), and 5)CS (n=25). Evaluations took place at baseline, one and three months. Western Ontario and McMaster University Osteoarthritis Index (WOMAC) and Lequesne scores were recorded. Statistical analysis included mixed analysis of variance, with post-hoc comparisons with Sidak's adjustment, and multiple linear regression (MLR) to identify those possible factors associated to WOMAC total at 3 months.

Results: Regarding WOMAC pain, significative differences were found in NAJL, at one month and at 3 months; and in NAJL+CS at one month. For WOMAC stiffness, there were significative differences in NAJL at one month and at 3 months; in NAJL+HA after one month and 3 months versus one month; and in NAJL+CS, at one month. For WOMAC function, significative differences were found in NAJL at one month and at three months; in NAJL+CS at one month; and in HA at 3 months. Regarding WOMAC total, significative differences were found in NAJL at one month ($p<0.001$) and at 3 months ($p<0.001$); and in NAJL+CS at one month ($p=0.018$). For Lequesne, significative differences were found in HA at one month ($p=0.003$) and at 3 months ($p=0.019$) versus baseline; and in CS, at one month ($p<0.001$). The WOMAC function at baseline, NAJL+HA, and infiltration with CS are the variables that show a significant association with WOMAC total at 3 months. The group that received NAJL+HA had poorer outcomes.

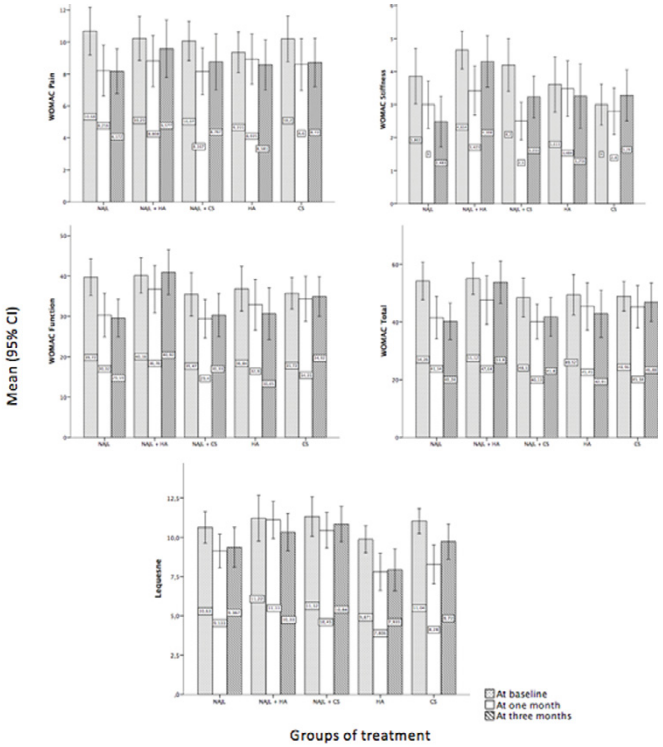

Figure 1. Clinical outcomes. WOMAC pain, stiffness, function and total, and Lequesne at baseline, at one month after treatment and three months after treatment.
Data are expressed as mean and confidence intervals are shown.
CI, confidence interval; NAJL, non arthroscopic joint lavage; HA, hyaluronic acid; CS, corticosteroid; WOMAC, Western Ontario and McMaster Universities Osteoarthritis Index

Conclusions: One month after treatment, best outcomes were obtained with HA due to the results found in Lequesne scale when comparing HA versus NAJL+HA, and NAJL+CS. Three months after the treatment, the most effective modality treatment was NAJL; since we did find significant differences regarding articular stiffness, physical function and Lequesne scale. The treatment with NAJL+HA appears to be less effective than the other modalities.

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SAT0528 MOLECULAR MODIFICATIONS INDUCED BY MUD-BATH THERAPY IN PATIENTS WITH OSTEOARTHRITIS

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Background: Mud-bath therapy (MBT) is a non-pharmacological approach commonly used to treat osteoarthritis (OA). Several data indicate that MBT improve patient's symptoms (1), exerting a beneficial effect on pain and joint function, although the biological mechanisms involved in the therapeutic response are poorly defined.

Objectives: This study aimed to find molecular changes (proteins and mRNA variations) in patients with OA after MBT treatment.

Methods: The study included 39 patients whit primary diffuse osteoarthritis, assigned to receive a cycle of mud-bath therapy over a period of 2 weeks added to usual pharmacologic treatment. Whole blood and serum were collected before and after standard MBT treatment: for each time points two pools of patients sera were analyzed by the direct antigen-labeling technology (RayBio® Biotin Label-based Antibody Array, RayBiotech) obtaining a broad, panoramic view of protein expression. Using this semi-quantitative technique up to 1000 target proteins was simultaneously detected, making this approach ideally suited for proteomic studies. Again, pooled samples of mRNA were used to investigate genes expression and to perform the transcriptomic analysis using an high-resolution array design that contains >6.0 million distinct probes, covering coding and non-coding transcripts (GeneChip® HTA 2.0, Affymetrix).