and long-term (24 months) served as primary outcomes measure, function as secondary. Outcome measures measured on different scales were standardized to a 0–100 scale to pool the data. All analyses were performed with and without stratifying for affected joint and type of glucosamine substance.

Results: Out of 21 eligible studies, six studies (N=1663) shared their trial data with the OA Trial Bank. Only one of these studies (N=40) was industry driven. All six studies had a low risk of bias, of which five trials (all not industry driven) compared glucosamine to placebo. These five studies represented 50% of the total number of randomized subjects in all published trials for this comparison. No main effects of glucosamine were found on pain or function at short-term (mean difference 0.31 95% CI [-2.02 to 2.64] and 1.56 [-0.56 to 3.69], respectively) and at long-term follow-up (0.98 [-1.76 to 3.73] and 1.40 [-1.27 to 4.06], respectively). Also, no significant interactions with treatment were found for subgroups based on pain severity (WOMAC pain <70 vs. ≥70), BMI (<27 kg/m² vs. ≥27 kg/m²), sex (male vs. female) and structural abnormalities (KL-grade 0–2 vs. 3–4), see Table. Stratification for knee OA patients only and for type of glucosamine did not result in any differences in the outcomes. No data was available to adequately form subgroups based on degree of inflammation.

Estimated pooled differences between glucosamine and placebo on a 0–100 scale and p-values for treatment-subgroup interactions.

	All studies (N = 1394)	Knee OA only (N = 1172)	GH in knee OA (N = 671)	GS in knee and hip OA (N = 723)	GS in knee OA (N = 501)
Pain at short-term*					
Estimated pooled differences and 95% confidence interval					
Glucosamine vs placebo	0.31 (-2.02 – 2.64)	0.53 (-2.21 – 3.26)	1.97 (-1.14 – 5.09)	-2.62 (-6.03 – 0.79)	-5.99 (-11.50 – -0.48)
p-values for treatment-subgroup interactions					
Pain subgroup	0.80	0.92	0.94	0.59	0.81
BMI subgroup	0.36	0.66	0.83	0.30	0.43
Sex subgroup	0.80	0.70	0.80	0.67	0.62
KL subgroup	-	-	-	-	-
Pain at long-term*					
Estimated pooled differences and 95% confidence interval					
Glucosamine vs placebo	0.98 (-1.76 – 3.73)	0.19 (-2.83 – 3.22)	0.78 (-4.33 – 5.89)	1.22 (-1.90 – 4.33)	-0.38 (-3.67 – 2.90)
p-values for treatment-subgroup interactions					
Pain subgroup	0.26	0.28	0.42	0.44	0.86
BMI subgroup	0.55	0.10	0.51	0.72	0.10
Sex subgroup	0.46	0.53	0.75	0.52	0.77
KL subgroup	-	0.40	-	-	-
Functional at short-term**					
Estimated pooled differences and 95% confidence interval					
Glucosamine vs placebo	1.56 (-0.56 – 3.69)	1.57 (-0.93 – 4.31)	2.13 (-0.82 – 5.09)	0.74 (-2.06 – 3.53)	-1.38 (-5.91 – 3.16)
p-values for treatment-subgroup interactions					
Pain subgroup	0.46	0.32	0.38	0.97	0.90
BMI subgroup	0.92	0.87	1.00	0.83	0.45
Sex subgroup	0.55	0.37	0.23	0.49	0.79
KL subgroup	-	-	-	-	-
Functional at long-term**					
Estimated pooled differences and 95% confidence interval					
Glucosamine vs placebo	1.40 (-1.27 – 4.06)	0.63 (-2.31 – 3.58)	0.85 (-4.43 – 6.13)	2.02 (-0.82 – 4.86)	0.62 (-2.29 – 3.52)
p-values for treatment-subgroup interactions					
Pain subgroup	0.49	0.38	0.55	0.94	0.91
BMI subgroup	0.82	0.42	0.65	0.56	0.68
Sex subgroup	0.72	0.61	0.80	1.00	0.94
KL subgroup	-	0.77	-	-	-

* measured using WOMAC pain (0–100) and adjusted for age, sex, BMI, WOMAC pain at baseline and study number. ** measured using WOMAC function (0–100) and adjusted for age, sex, BMI, WOMAC function at baseline and study number. Positive estimated pooled differences indicate a greater reduction in the outcome in the glucosamine group compared to the placebo group. GS = glucosamine sulphate; GH = glucosamine hydrochloride.

Conclusions: The majority of industry-led glucosamine studies for osteoarthritis did not wish to share data, challenging optimal use of available data. There is currently no evidence for the use of glucosamine for the treatment of hip or knee osteoarthritis and an absence of support for clinically relevant subgroups of OA patients according to baseline pain severity, BMI, sex, and structural abnormalities.

Disclosure of Interest: None declared

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SAT0524 UTILITY OF TOCILIZUMAB IN CLINICAL MANIFESTATIONS OF EROSIIVE OSTEOARTHRITIS OF HANDS REGIONAL HOSPITAL ISSSTE PUEBLA, MÉXICO

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Background: Erosive osteoarthritis (EOA) is a form of severe involvement of osteoarthritis in the hands, characterized by inflammation of the synovium of the proximal interphalangeal (PIF) and distal joints (DIF); the last ones are the most affected in a symmetrical manner. Inhibition of interleukin 6 (IL-6) in joints with osteoarthritis helps to improve the production of the cartilaginous matrix and microfractures of articular cartilage.

Objectives: To know if the application of TCZ is useful for the control of the clinical manifestations of EOA of the hands.

Methods: Twenty-four patients with EOA were studied, 18 females and 6 males with ages ranging from 42 to 72 years, with an evolution time of 4 to 30 years. The application of TCZ was intravenous (8 mg/kg of body weight per month). Articular pain in the PIF and distal joints was evaluated by the visual analogue

scale (VAS) (0 to 10) and joint pain (0 to 50), morning stiffness (0 to 10), and functional limitation (0–90) by the AUSCAN index.

Results: The VAS showed improvement of 30% (0% to 100%). The AUSCAN index showed improved pain (16.2), morning stiffness (0.6) and functional limitation (17.5). Decreased ESR, CRP, and IL-6 levels less than 1.56 to 59.1 pg/ml.

Conclusions: IV Tocilizumab is useful for the control of the clinical manifestations of OAE of the hands. More precise studies are needed to evaluate the improvement of the cartilaginous matrix in EOA by TCZ.

Disclosure of Interest: None declared

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SAT0525 THE EFFICACY OF PELOID THERAPY IN MANAGEMENT OF HAND OSTEOARTHRITIS

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Background: Hand osteoarthritis (OA) is associated with pain, reduced grip strength, loss of range of motion (ROM), and joint stiffness, leading to impaired hand function and difficulty in performance of daily living activities. Various randomized controlled clinical trials were conducted to assess the efficacy and tolerability of mud-pack therapy in patients with knee OA. Data from these clinical trials support the beneficial effect of mud-pack therapy on pain, function, and quality of life in knee OA. However, to the best of our knowledge, in spite of its significant impact on the activities of daily life, there is a lack of adequate randomized controlled studies on peloid therapy in management of osteoarthritis of the hand.

Objectives: To investigate the effects of peloid therapy in the patients with hand OA on pain, functional state, grip strength, and the quality of life

Methods: 63 patients aged between 35 and 75 years, who had been diagnosed with hand OA were included in the study. Patients were randomized into 2 groups with a random number table. Patients in Group 1 (n=33) underwent peloid therapy over 2 weeks, 5 sessions a week, for a total of 10 sessions and home exercise program. Patients in Group 2 (control, n=30) received only the same home exercise program as in Group 1. Patients were evaluated just before, and 2 and 6 weeks after the start of the study with Visual Analogue Scale (VAS), Australian/Canadian Osteoarthritis Hand Index (AUSCAN) Health Assessment Questionnaire (HAQ), Hand Grip Strength (HGS), Pinch strength (PS).

Results: Statistically significant improvements were observed in all parameters assessed at week 2 and week 6 in the Group 1 (p<0.05). Statistically significant differences were observed in HGS scores in the Group 2 at week 2, and in AUSCAN scores at week 6 (p<0.05). Intergroup comparisons of the scores revealed significant differences between the peloid therapy group and control group in VAS, HAQ, AUSCAN, HGS and PS scores at week 2 and week 6 (p<0.05).

Conclusions: This study demonstrates that peloid therapy is an effective and confident treatment modality in the management of symptomatic osteoarthritis of the hand and provides effective pain control and improvements in the hand functions, quality of life and grip strength

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SAT0526 POSSIBILITY OF CARTILAGE REPAIR WITH PLATELET AUTOLOGOUS PLASMA (PAP)

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Background: The investigations of the platelet-derived biologic agents in osteoarthritis treatment had shown promising but often controversial results.

Objectives: To study the efficacy (in clinic & experiment) & safety (in clinic) of the platelet autologous plasma (PAP) in cartilage repair and treatment of early knee OA.

Methods: The study was conducted at the Department of Family Medicine and Traumatology and Orthopedic Department and consisted of 2 parts: experimental (20 rabbits with the traumatic damage of the knee cartilages) and clinical (included 146 patients with diagnosed knee OA (radiological stage I-II). Rabbits

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 $1260,24 \pm 22,1 \times 10^9$); 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 $40,9 \pm 0,7$ Gr.2 $39,7 \pm 0,9$, $p > 0,05$). 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 ($0,7 \pm 0,02$) in Gr.1 & ($1,6 \pm 0,04$) in Gr.2 ($p < 0,05$) and general WOMAC index in Gr.1 was significantly lower than in Gr.2 (accordingly ($22,8 \pm 0,3$) and ($36,5 \pm 0,8$); $p < 0,05$).

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