in the inflammatory biomarkers (IL-4, IL-6, hs-CRP, TNF-α, TGF-β and mean ESR between the curcuminoid treatment group and the placebo group (p>0.05)[6].
Conclusion: Enriched boswellic acid and curcumin/piperine formulations demonstrate efficacy and safety for suitable treatment option: both ingredients, often cited as natural alternatives to address OA pain and stiffness could be evaluated to explore the potential benefit as a formulated combination.
REFERENCES:
[1] *Vishal et al. Int. J. Med. Sci. 2011, 8*
[2] *Sengupta et al. Int. J. Med. Sci. 2010, 7*
[3] *Sengupta et al. Mol Cell Biochem. 2011, 354:189-197.*
[4] *Shoba et al. Planta Med. 1998 May;64(4):353-6*
[5] *Panahi et al. Phytother. Res. 28: 1625–1631 (2014).*
[6] *Rahimnia A-R et al. Drug Res 2015; 65: 521–525.*
Disclosure of Interests: Vidhu Sethi Employee of: Employee of GSK Consumer Healthcare, Kamran Siddiqui Employee of: Employee of GSK Consumer Healthcare, Manohar Garg: None declared.
DOI: 10.1136/annrheumdis-2021-eular.2247

AB0596 THE POSSIBLE CONTRIBUTION OF DEHYDROEPIANDROSTERONE SULFATE FOR OSTEOARTHRITIS OF THE KNEE

I. Bashkova[1,2], I. Madyanov[1,3], K. Misko[1], E. Preobrazhenskaia[4]. [1]*Chuvash State University named after I.N. Ulyanov, Department of Hospital Therapy, Cheboksary, Russian Federation*; [2]*Federal Center of Traumatology, Orthopedics and Endoprosthesis, Consultative polyclinic, Cheboksary, Russian Federation*; [3]*Republican Clinical Hospital, Department of Endocrinology, Cheboksary, Russian Federation*; [4]*Federal Center of Traumatology, Orthopedics and endoprosthesis, Scientific and Educational Department, Cheboksary, Russian Federation*

Background: Genetic, biochemical, metabolic, hormonal (primarily imbalance of sex hormones) factors are involved in the progression of osteoarthritis (OA). Dehydroepiandrosterone and its metabolite, dehydroepiandrosterone sulfate (DHEA-S), have a stress-limiting, anti-atherogenic, anti-diabetic, antihypertensive, anti-infective, immunomodulatory effects. Heroprotective effect is not excluded. Experimental studies have identified a relationship between an age-related decrease in DHEA-S levels and various adverse effects of aging.
Objectives: To identify the contribution of DHEA-S to the pathogenesis of OA, it`s advisable to conduct a comparative analysis of connection of the adrenal hormones with clinical, laboratory, radiological signs of the course of OA.
Methods: Patients with primary OA with a lesion of the knee joints (n=90, including 22 men) were examined. The age of the patients - 29-69 years, the duration of the disease – 1.5-20 years. The control group (n=114, including 26 men) was formed by random sampling of the population from healthy people, it`s representative by gender and age. We investigated the serum levels of cortisol, DHEA-S, estradiol (in women), testosterone (in men) and carried out radiography of the knee joints. OA was diagnosed using R.D. Althman, the x-ray stage-according to the classification of Kellgren and Lawrence. Statistically determined the mean value, standard deviation. Differences between the samples were considered statistically significant at p<0.05. To create a model of OA pathogenesis, the method of principal components of factor analysis was used.
Results: The DHEA-S level in the blood of patients with OA was lower than that of the control group (2.40±1.20 vs 3.66±1.45 μg/ml, p=0.001),in women-was lower, than in men (2.25±1.17 vs 2.89±1.23 μg/ml, p=0.045). In the control group, gender differences were not statistically significant (p>0.05). All patients with OA showed an inverse correlation between age and DHEA-S (r=-0.511, p=0.0001, and r=-0.549, p=0.0001 respectively). For factor analysis the most important signs for the course of OA are ESR levels, C-reactive protein (CRP) in the blood (as markers of inflammatory component of OA, or factor 2) were selected, and the radiological stage of OA (degenerative component, or factor 1). In women, we regarded factor 1 as «degenerative», the maximum contribution to total dispersion was made by the «x-ray stage» (+0.72). This symptom was opposed by the «DHEA-S level» (-0.79) and «estradiol blood level» (-0.68), which suggests a link between degenerative and dystrophic processes in the knee joint in women with OA and a decrease in blood levels of DHEA-S and estradiol. Factor 2 we interpreted as «inflammatory». This was indicated by the values of «CRP» (+0.66) and «ESR» (+0.64). The «inflammatory» factor in women from hormonal indicators was opposed by the «blood cortisol content» (-0.31) and «DHEA-S level» (-0.26). Factor 1 in men accounted for 46% of the total variance. Since factor 1 in men included the most significant «CRP» (+0.85), «X-ray stage» (+0.77) and «ESR» (+0.72), we called it «antidegenerative anti-inflammatory factor». The maximum value (modulo) in factor 1 is for DHEA-S (-0.76) and the lower is for testosterone (-0.53). So, in men, a sufficient level of DHEA-S is closely related to the «antidegenerative-anti-inflammatory» factor of OA pathogenesis and DHEA-S counteracts 2 key pathogenetic processes simultaneously-degenerative and inflammatory.
Conclusion: In women, a decrease in DHEA-S is a risk factor for the predominantly degenerative component of OA, in men it`s a universal risk factor, predisposing both to the development of inflammation and degenerative changes in the joints
Disclosure of Interests: None declared.
DOI: 10.1136/annrheumdis-2021-eular.2308

AB0597 COMPLIANCE WITH CLINICAL PRACTICE GUIDELINES IN KNEE OSTEOARTHRITIS

M. Yasmine[1], L. Souebni[1], S. Miladi[1], A. Fazaa[1], S. Mariem[1], K. Ouenniche[1], S. Kassab[1], S. Chekili[1], K. Ben Abdelghani[1], A. Laatar[1]. [1]*Mongi Slim Hospital, Rheumatology, Tunis, Tunisia*

Background: Knee osteoarthritis (OA) is a leading cause of disability among older adults. Recently, evidence-based guidelines for the comprehensive management of osteoarthritis (OA) were developed by the American College of Rheumatology (ACR).
Objectives: The aim of this study was to assess compliance of doctors with ACR 2019 clinical practice guidelines for the management of knee OA.
Methods: We conducted a prospective study including rheumatologists and general practitioners. The doctors were invited to answer a structured questionnaire via Google Form. The outcomes of interest concerned the medical management of knee OA as well as alternative medicine.
Results: The study included 100 doctors: 75 rheumatologists and 25 general practitioners. Almost half of them (49%) have been practicing medicine for more than 10 years. Forty four percent of doctors see between 10 to 20 patients with knee OA per month and 47% of them declared seeing more than 20 patients. Regarding the pharmacological treatment of knee OA flares, oral Non-steroidal Anti-inflammatory drug (NSAIDs) was the initial molecule of choice (91%) followed by grade I analgesics (86 %) and topical NSAIDs (68%). Tramadol and non-Tramadol opioids as well as intraarticular glucocorticoid injections were prescribed respectively in 41% and 46 % of cases. Glucosamine and chondroitin sulfate were prescribed in 49% and 54% of cases respectively and as a combination in 20% of cases. The reasons for non-prescribing these molecules were non-affordable prices (n=19), a lack of efficacy (n=6) and potential sides effects (n=1). Seventy three percent of doctors prescribe hyaluronic acid injections, with a frequency of three weekly injections in 38.7 % of cases and according to the response to the first injection in 61.3% of cases. The combination of both corticosteroids and hyaluronic acid injection was preferred in 38% of cases. The majority of doctors (84%) referred their patients to physical therapy as a first-line prescription (82.1%) or after medical treatment failure (17.9%). The use of alternative medicine was at follows: acupuncture (42.7%), prolotherapy (28.1%) and platelet-rich plasma injections (16.7%). Thirty eight doctors recommended against alternative medicine.
Conclusion: Our study showed a poor compliance to guidelines regarding the use of intra-articular injections and alternative medicine. Even though, these guidelines provide direction for clinicians, doctors and patients should engage in shared decision-making that accounts for patients' values, preferences, and susceptibilities.
Disclosure of Interests: None declared.
DOI: 10.1136/annrheumdis-2021-eular.2896

AB0598 EFFICACY OF ULTRASOUND GUIDED INJECTIONS OF A CROSS-LINKED SODIUM HYALURONATE COMBINED WITH TRIAMCINOLONE HEXACETONIDE FOR OSTEOARTHRITIS OF THE KNEE

F. Porta[1], G. Filippou[2], G. Sakellariou[3]. [1]*Florence, Istituto di Neuroscienze, Florence, Italy*; [2]*Luigi Sacco University Hospital, Rheumatology Department, Milano, Italy*; [3]*University of Pavia, Istituti Clinici Scientifici Maugeri IRCCS, Pavia, Italy*

Background: According to guidelines, the use of steroid and/or hyaluronate (HA) intra-articular injections for knee osteoarthritis (KOA) is controversial. Heterogeneity of studies and difference in HAs characteristics does not allow to draw safe conclusions. One of the major concerns is the accuracy of the procedure as up to 1/3 of injections could miss joint space when performed blindly (1), negatively affecting the efficacy of HA that needs to be placed correctly in the joint space
Objectives: The aim of our study was to evaluate the longterm efficacy of a novel association of a Cross-Linked Sodium Hyaluronate Combined With Triamcinolone Hexacetonide (SHCTH) in patients with KOA in a real life setting.
Methods: We retrospectively evaluated the clinical and ultrasonographic (US) data of patients (pts) affected by symptomatic KOA with intra-articular injections of SHCTH (1 injection every 6 months). Pts with concomitant inflammatory arthropaties were excluded. US guidance was carried out with the "in plane" technique choosing either the lateral suprapatellar or midpatellar approach. All pts were evaluated for pain with a VAS 0-10 for pain at baseline and after 2 weeks, 1, 3, 6, 9 and 12 months, with the WOMAC questionnaire and with US, scoring joint effusion, synovial hypertrophy (SH) and power Doppler (PD) synovial signal. Due to the retrospective design, the WOMAC data were available as VAS or Likert scales; to allow comparability these values were standardized. Clinical and US variables at different time points were compared using the Wilcoxon rank sing test, the McNemar test or the paired samples t-test, depending on the variable.

Results: 49 knees (43 pts, median age 70.6 years, 24 women) were included in the study. Kellgren Lawrence grade was 1 for 5 knees, 2 for 10, 3 for 17 and 4 for 9. SHCTH was delivered correctly in the joint space in all patients as assessed by US check during the injection and no side effects occurred. Of the 49 knees, 28 had an available 6 months follow-up, while 21 completed the 12 months follow-up, with an attrition mostly related to the COVID 19 pandemic. A rapid and sustained statistically significant decrease of both VAS pain and the WOMAC subscales was observed. The reduction of pain was already significant at 2 weeks, probably thanks to the corticosteroid component. At US evaluation, effusion significantly decreased at all time points. Although SH scores also significantly decreased, the effect on the proportion of affected joints was not as relevant. The reduction of PD was significant until month 9. Detailed results are presented in Table 1.
Conclusion: Our data show that US guided SHCTH injections provide a rapid and sustained clinical response in patients with symptomatic OA. Besides the effect on pain, the US data confirm the effect of the drug on the inflammation. US guidance guaranteed the correct placement of the product in all patients and eliminated the bias of wrong placement that may occur with blind injections, thus allowing to draw safe conclusions on the efficacy of SHCTH for the treatment of KOA.
REFERENCES:
[1] Jones A, Regan M, Ledingham J, *et al.* Importance of placement of intra-articular steroid injections. *BMJ* 1993;**307**:1329–30.

Table 1. Clinical and US measures. p values refer to the comparison with baseline. WOMAC subscales were compared by paired samples t test. *hypothesis test not applicable

	baseline	2 weeks	1 month	3 months	6 months	9 months	12 months
VAS (median,IQR)	6 (5-8)	3 (1-4.25) p<0.0001	2 (0.5-3-5) p<0.0001	1.5 (0-3) p<0.0001	1.5 (0-4) p<0.0001	1 (0-2.75) p<0.0001	1 (0-3.25) p<0.0001
WOMAC pain	-	-	p 0.028	p 0.0004	p 0.0036	p 0.0096	p 0.0064
WOMAC stiffness	-	-	p 0.048	p 0.040	p 0.0388	p<0.0001	p 0.0083
WOMAC function	-	-	p 0.043	p 0.0005	p 0.0014	p 0.01	p 0.007
Effusion 0-3 (median,IQR)	2 (1-2)	-	1 (0-1) p<0.0001	1 (0-1) p<0.0001	1 (0-1) p 0.0001	0 (0-1) p<0.0001	1 (0-1) p<0.0001
Synovial Hypertrophy 0-3 (median,IQR)	1 (1-2)	-	1 (1-1) p 0.002	1 (1-1) p 0.0001	1 (1-1) p 0.0001	1 (0-1) p 0.0001	1 (0.5-1) p 0.0001
PD 0-3 (median,IQR)	0 (0-0)	-	0 (0-0) p 0.03	0 (0-0) p 0.03	0 (0-0) P 0.06	1 (0-1) p 0.01	0 (0-0) p 0.31

Disclosure of Interests: None declared.
DOI: 10.1136/annrheumdis-2021-eular.3035

AB0599 EFFICACY AND SAFETY OF COMBINATION THERAPY WITH NSAIDS AND ANTICONVULSANT, COMPARED WITH NSAID MONOTHERAPY FOR CHRONIC PAIN IN PATIENTS WITH OSTEOARTHRITIS OF THE KNEE JOINTS

E. Filatova[1], L. Alekseeva2, E. Taskina[1], N. Kashevarova[1], A. Lila[1], E. Sharapova3. *[1]VA Nasonova Research Institute of Rheumatology, Rheumatology, Moscow, Russian Federation*; *[1]VA Nasonova Research Institute of Rheumatology, Rheumatology, Moscow, Russian Federation*; *[1]VA Nasonova Research Institute of Rheumatology, Rheumatology, Moscow, Russian Federation*

Background: In 20-44% of patients with osteoarthritis of the knee joints neuroplastic changes occur due to central sensitization (1,2), which is the rationale for complex therapy, including centrally acting drugs, for more effective pain control.
Objectives: To evaluate the efficacy and safety of combination therapy with NSAID and anticonvulsant in comparison with NSAID monotherapy in patients with osteoarthritis of the knee joints and signs of central sensitization or nocyplastic pain
Methods: The study included 60 women with osteoarthritis of the knee joints (OAK) with signs of nocyplastic pain. Nocyplastic pain were revealed by neuropathic scales (DN4 questionnaire > 4 points), subject to the absence of patients lesions of the somatosensory nervous system. All patients were randomized into two age- and sex-matched groups: group I (n=30) received combination therapy with aceclofenac and pregabalin, group II (n=30) - monotherapy with aceclofenac. The observation period was 42 days and included three visits. All patients underwent a clinical and neurological examination, we assessed the overall WOMAC index, pain intensity at rest with the visual analogue scale (VAS), nocyplastic pain (DN4 and Pain DETECT questionnaires), anxiety and depression (HADS questionnaire) and the quality of life (EQ-5D questionnaire).
Results: The intensity of pain at rest according to VAS in patients of group I significantly decreased after 14 days (visit 2) and even further after 42 days (visit 3) (64.0 [50.0; 72.0] vs 49.0 [33.0; 55.0] vs 33.5 [22.0; 49.0] p = 0.006). In group II the intensity of pain at rest also decreased after 14 days (visit 2) (63.0 [41.0; 72.0] vs 48.0 [35.0; 58.0] p <0.001), however, did not change significantly from visit 2 to 3 (48.0 [35.0; 58.0] vs 44.0 [35.0; 60.0]) (p = 0.57).
The dynamics of neuropathic pain indicators according to the DN4 and Pain DETECT questionnaires was as follows: group I (visit 1-3) DN4 (6.0 [5.0; 7.0] vs 3.0[1.0; 4.0], p=0.001) and Pain DETECT (17.0 [16.0;20.0] vs 8.0 [5.0; 14.0], p=0.001). Group II DN4 (6.0[5.0;6.0] vs 5,0 [3,0; 6,0],p=0,05), Pain DETECT (17,0 [15,0; 19,0] vs 16.0 [14,0; 19,0],p=0,53).
The overall WOMAC index decreased significantly in both groups.
Significant positive dynamics in terms of the level of anxiety (9.0 [7.0;14.0] vs 7.0 [4.0;10.0], p=0.001), depression (8.0 [5.0;10.0] vs 6.5 [4.0;9.0], p= 0.03) and quality of life (0.52 [-0.02;0.52] vs 0.52 [0.52;0.59], p=0.01) was observed compared to baseline in group I but not in group II. Before the start of therapy, the groups were comparable in the studied parameters, however, after 42 days, anxiety (7.0 [4.0;10.0] vs 9.0 [7.0;12.0], p=0.02) and depression levels (6.5 [4.0;9.0] vs 8.0 [6.0;9.0], p=0.05) were statistically different. Moreover, the median anxiety and depression levels still exceeded 7 points in group II, indicating the presence of anxiety and depression.
Conclusion: Combination therapy of chronic pain with signs of nocyplastic pain with pregabalin and aceclofenac in patients with knee osteoarthritis has been shown to be effective in terms of pain intensity, the presence of neuropathic descriptors and the severity of anxiety compared with aceclofenac alone.
REFERENCES:
[1] Hochman JR, French MR, Bermingham SL, Hawker GA. The nerve of osteoarthritis pain. Arthritis Care Res (Hoboken). 2010;62:1019–23.
[2] Hochman JR, Gagliese L, Davis AM, Hawker GA. Neuropathic pain symptoms in a community knee OA cohort. Osteoarthr Cartil. 2011;19:647–54.
Disclosure of Interests: None declared.
DOI: 10.1136/annrheumdis-2021-eular.3062

AB0600 VISCOSUPPLEMENTATION VERSUS PHYSICAL REHABILITATION IN KNEE OSTEOARTHRITIS COMPARATIVE STUDY ABOUT 117 CASES

S. Lahrichi[1], K. Nassar[1], S. Janani[1]. *[1]University Hospital of IBN ROCHD, Rheumatology, Casablanca, Morocco*

Background: Viscosupplementation with hyaluronic acid, and physical rehabilitation are part of the adjunct treatments for osteoarthritis, and particularly knee osteoarthritis.They can be used alone or combined.
Objectives: To compare the efficacy of rehabilitation and viscosupplementation in patients followed for stage II and III osteoarthritis.
Methods: This is a cross-sectional study, conducted in the department of rheumatology of the University Hospital oflbn Rochd, Casablanca, between August 2020 and December 2020. Inclusion criteria: patients with stage II and III knee osteoarthritis fulfilling the ACR criteria. The diagnosis was made on standard x-rays including antero-posterior and lateral views. The functionalassessmentwas made with functional algo indices, WOMAC and Lequesnne. Pain was assessed with a visual analogue scale (VAS) on Day 0 and after 3 months. The patients were divided into 3 groups of 39 patients, the first (G1) received an infiltration of hyaluronic acid according to different protocols (multiple injections or single injection), the second (G2) benefited from a rehabilitation program twiceor three timesa week for three months, and the third group (G3) benefited from viscosupplementation associated with rehabilitation. Patients who received an intra-articular corticosteroid injection in the last 3 months were excluded.
Results: There were 117 patients. The mean age was 59.6 ± 8.6, with a female predominance of 96.8%. Knee osteoarthritis was clinically patent for 5.8 years, with an average of 7.4 painful flares. Gonarthrosis was bicompartmental in 52 patients and tri-compartmental in 18 patients. 45% had a family history of osteoarthritis. 28% were hypertensive, 18 patients were diabetic and 51.87% were obese according to the body mass index, with an average of 30.5 ± 5.2 kg/m^2. 65% had already received oral anti-arthritis drugs for an average of 1 year. Functional improvement was approximately 38% in G1, 26% in G2, and 42% in G3. A significant algo-functional improvement was noted in G1 (p = 0.04) and G3 (p = 0.03). LEQUESNE's index went from an average of 8 in the 3 groups to an average of 4 inG1 and G3 versus 6 in G2, which corresponds to an average handicap (p = 0.2). The final value of the WOMAC index in G1 was 26.57 versus 32.21 in G2 (p = 0.01) and versus 22.36 in G3 (p = 0.02).
Conclusion: In our study, the final evaluation showed a decrease in pain and an improvement in functional capacity ranging from 36 to 58%. This improvement in algo-functional indices was significantly more marked in G3[1]. Our study shows that the combination of visco-supplementation with physical rehabilitation gives better results by improving the algo-functional indices than by visco-supplementation alone. Our findings are consistent with the results of the literature[2].
REFERENCES:
[1] Lebib S, Ben SalahFZ, Ksibi I, Dziri C. The´rapeutiques non me´dicamen-teuses de l'arthrose des membres infe´rieurs: e´tats de lieux et perspectives. RevFr Geriat Gerontol 2006;126(XIII):296–30
[2] Bruyere O, Cooper C, Pelletier JP, Branco J, Luisa BrandiM, GuilleminF, etal. AnalgorithmrecommendationforthemanagementofkneeosteoarthritisinEuropeandinternationally:areportfromataskforceoftheEuropeanSocietyforClinicalandEconomicAspectsofOsteoporosisandOsteoarthritis(ESCEO). Semin Arthritis Rheum. 2014;44(3):253–26
Disclosure of Interests: None declared.
DOI: 10.1136/annrheumdis-2021-eular.3109