



# **Abstractes of the 16<sup>th</sup> Annual Congress of Iranian Rheumatology Association**

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## Estimate the most common diseases and clinical manifestations in community in order to use for revising the curriculum and content of the rheumatology course for medical students

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**Aim:** There are numerous entities for rheumatic diseases. Determining the educational content for medical students should be done according to the most common diseases and clinical manifestations. Accordingly, medical students can meet the needs of community with the best possible quality in terms of diagnosis, treatment and on time referral to specialist after graduating as first line medical provider. Therefore, this study was designed to estimate frequency distribution of patients with various rheumatic clinical manifestations and diseases referred to a general hospital.

**Methods:** This was a retrospective cross-sectional study. Medical records of 2006 patients who were visited by rheumatologist in rheumatology clinic of a general hospital during a full year were reviewed. The data including clinical manifestations and diagnoses were collected using a checklist.

**Results:** The average age of the patients was  $48.72 \pm 15.71$  years. Women constituted 74.8% of patients. The frequency of inflammatory, non-inflammatory and both diseases were 17.2%, 79.46% and 3.34%. The most common diagnoses were knee osteoarthritis, periartthritis, fibromyalgia, discopathy and RA (29.42%, 15.3%, 8.75%, 6.24% and 6.2%). The most common clinical manifestations were knee, back and hand pain (30.96%, 10.18% and 9.35%). Plantar fasciitis, carpal tunnel syndrome and rotator cuff tendonitis were the most common among periarticular disorders.

**Conclusion:** The most common diagnoses and clinical manifestations obtained from this study should be considered for planning content of rheumatology course for medical students. Renewal of this study in other regions to better estimate distribution of diseases is suggested to plan curriculum based on it.

**Keywords:** Diagnosis; Musculoskeletal diseases; Rheumatic diseases

## Prophylactic effects of TNF $\alpha$ -blockers/inhibitors in the prevention of COVID-19 in patients with rheumatoid arthritis and seronegative spondyloarthropathies

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Characterization of the molecular mechanisms of infection and inflammation by SARS-CoV-2 will facilitate finding appropriate drugs to prevent or treat COVID-19. The interaction between angiotensin convert enzyme 2 (ACE2) and SARS-CoV-2 is a crucial factor in the viral infection leading to the release of inflammatory proteins, such as TNF- $\alpha$ . Thus, it is hypothesized that TNF- $\alpha$  blockers/inhibitors can prevent either COVID-19 incidence or the development of its serious symptoms. TNF $\alpha$  blockers belong to biologic disease-modifying antirheumatic drugs (bDMARDs) prescribed to treat various autoimmune disorders, including rheumatoid arthritis (RA) and seronegative spondyloarthropathies (SpA). Patients with these inflammatory diseases who are also receiving TNF $\alpha$  blockers can provide a valuable research opportunity to test this hypothesis in humans under real conditions. Therefore, we have investigated the frequency of COVID-19 development in 254 eligible patients with RA or SpA about whom 45% were under treatment with one type of TNF $\alpha$  blockers, including Infliximab, Adalimumab and Etanercept. The results showed that a small percentage of patients (about 5%) treated with TNF $\alpha$  blockers experienced COVID-19, while the incidence of COVID-19 in the group without TNF $\alpha$  blockers was higher (about 73%). The logistic regression implied that TNF $\alpha$  blockers could decrease the chance of the COVID-19 incidence. TNF $\alpha$  blockers can also prevent cytokine storm caused by SARS-CoV-2, resulting in reducing COVID-19 severity. Therefore, a direct positive correlation between the use of TNF $\alpha$  blockers and a reduction in the incidence of COVID-19 can suggest the prophylactic role of these drugs in preventing COVID-19 in patients with RA and SpA.

**Keywords:** Rheumatoid arthritis; Seronegative spondyloarthropathies; TNF $\alpha$  blockers

## Discordance in diagnosis of osteoporosis using spine and hip bone densitometry in Rafsanjan

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**Aim:** Measuring bone mineral density (BMD) in at least two sites is essential for diagnosing osteoporosis. This study aimed to investigate the discordance between spine and pelvic bones by dual-energy X-ray absorptiometry (DXA) in diagnosis of osteoporosis and some effective factors.

**Methods:** This cross-sectional study was conducted on 1270 patients referred to Rafsanjan BMD center in 2021. The inclusion criteria included at least 20 years of age and having one of the risk factors for osteoporosis. BMD was measured in the pelvic bones and L1-L4 vertebrae of the spine by DXA method. According to the T-score index, a value less than -2.5 was considered as osteoporosis and a value from -1 to -2.5 as osteopenia. The collected data were analyzed using SPSS22 statistical software with a significance level of 0.05.

**Results:** 83.5% of the participants were female and 46.9% were in the age group of 65 to 50 years. Based on the T-score, there were 48.6% (617 cases) concordance, 44.5% (565 cases) mild discordance, and 6.9% (88 cases) severe discordance, and based on the Z-score, there were 60% (762 cases) concordance, 37.5% (476 cases) mild discordance, and 2.5% (32 cases) severe discordance. According to the results of the proportional odds model, gender, age group, tea consumption, place of residence, and physical activity significantly changed the probability of discordance in the results.

**Conclusion:** Based on the results, physicians should expect discordance in the results of T-score and Z-score in the spine and pelvic bones in about half of people.

**Keywords:** Osteoporosis; Bone density; Pelvic Bones; Spine; Discordance

## Assessment of self-medication in patients with rheumatoid arthritis referred to Rafsanjan rheumatology clinic during the COVID-19 pandemic

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**Aim:** The COVID-19 disease has affected patients with rheumatoid arthritis. Drug adherence is one of the necessities of rheumatoid arthritis control. This study was investigated the self-medication in rheumatoid arthritis patients in the COVID-19 pandemic.

**Methods:** This cross-sectional study was performed on 288 patients with rheumatoid arthritis referred to the Rheumatology Clinic of Rafsanjan in 2021. Data was extracted by checklist. Patients were examined and the type of used drugs, drug dose and dose change were recorded. Inclusion criteria were diagnosis of rheumatoid arthritis, care during the last year and over 16 years of age. Data were analyzed using SPSS/18 software.

**Results:** The mean  $\pm$  SD of patients' age were  $53.3 \pm 12.6$  years and 53.8% of patients were male. The mean  $\pm$  SD duration of the disease was  $7.04 \pm 6.37$  years. Self-medication observed in all drugs, which Alendronate (100.0%,  $n = 13$ ), Folic Acid (100.0%,  $n = 7$ ), Methotrexate (94.1%,  $n=32$ ) and Prednisolone (89.3%,  $n=25$ ) had the highest frequency of changes among other drugs ( $P<0.001$ ). The mean $\pm$ SD dose of Hydroxychloroquine increased from  $1358.5\pm304.4$  to  $1368.0\pm336.2$  mg before and during the COVID-19 pandemic ( $P=0.319$ ). The odd ratio of self-medication was higher in women (OR = 6.130, 95%CI: 2.915-12.993), RA patient with academic education (OR = 2.727, 95%CI: 1.037-7.166) and, lower in RA patient with governmental job (OR = 0.277, 95%CI: 0.086-0.893).

**Conclusion:** Self-medication of rheumatoid arthritis drugs maybe occur due to the positive effect of these drugs on COVID-19 disease and further reduced drug accessibility. It is necessary to plan for prevent self-medication in these patients by physician.

**Keywords:** COVID-19; Rheumatoid Arthritis; Self-Medication; Hydroxychloroquine; Prednisolone; Methotrexate

## Magnet therapy and electroacupuncture in the treatment of knee osteoarthritis: A double-blind randomized clinical trial

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**Aim:** Various treatments for knee osteoarthritis (KOA) are available to physicians, but given the side effects of drug treatment, other methods have been welcomed. This study aimed to evaluate and compare the effects of magnet therapy (MT) and electroacupuncture (EA) in the treatment of KOA.

**Methods:** In this randomized double-blind clinical trial, 93 patients with KOA were selected in three groups, including MT intervention, EA intervention, and routine treatment (RT) group. The inclusion criteria were definitive diagnosis of KOA, pain for more than three months, and the ability to walk. The study indicators included pain intensity, 6-minute movement test, pain, stiffness, and knee function using the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) before the intervention, the tenth session of treatment, and one month after the treatment period, which were evaluated by a specialist.

**Results:** The mean age of patients was  $67.44 \pm 5.18$  years. The scores of pain, 6-minute movement test, WOMAC index, stiffness, pain intensity, and physical activity were significantly different in the three groups ( $P < 0.001$ ). There was a significant difference between the three studied times in the variables ( $P < 0.05$ ). Moreover, the trend of mean changes of all the variables in the three groups, at different times, were significantly different from each other ( $P < 0.001$ ). In all the variables, MT was more effective than EA and RT.

**Conclusion:** MT compared to EA and RT had a greater effect on reducing pain, stiffness, and WOMAC index and increasing the physical activity improvement and 6-minute movement test in patients with KOA.

**Keywords:** Magnetic Therapy; Electroacupuncture; Knee Osteoarthritis; Physiotherapy

## The evaluation of the epigenetics related genes expression (DNMT, HDAC1) in Iranian patients with systemic lupus erythematosus

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**Aim:** Systemic Lupus Erythematosus (SLE) is an autoimmune disease in which the immune system abnormally reacts against cells and tissues leading to inflammation. Epigenetic alterations, including DNA methylation and histone modification, have critical effects on autoimmune disease and SLE pathogenesis via dysregulation of critical genes. The purpose of this study was to evaluate the epigenetic-related gene expression of DNA methyltransferase (DNMT) and Histone Deacetylase 1 (HDAC1) in Iranian patients with SLE.

**Methods:** This matched case-control study included 16 people with SLE and 16 healthy people who were referred to the Rafsanjan rheumatology clinic, in the southeast of Iran. The expression of DNMT and HDAC1 genes was measured through a Real-time PCR assay of blood samples.

**Results:** DNMT gene expression did not differ significantly between SLE and healthy groups ( $P = 0.21$ ). In contrast, HDAC1 gene expression was enhanced in the SLE group, but this enhancement failed to reach statistical significance ( $P = 0.94$ ).

**Conclusion:** The results of this study suggest that overexpression of HDAC1 could serve as a diagnostic for SLE disease. Additional studies with larger sample sizes are required to confirm our findings. Evaluation of other genes are related to SLE disease is essential and may help to form an accurate diagnosis of the disease.

**Keywords:** DNA methyltransferase; Epigenetic, Histone Deacetylase 1; Systemic Lupus Erythematosus; Iran

## Evaluation of mental health and sleep quality of patients with rheumatoid arthritis

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**Aim:** Rheumatoid arthritis is one of the most common autoimmune diseases that causes many physical and mental complications and disorders in patients; The aim of this study was to evaluate the mental health and sleep quality of patients with rheumatoid arthritis referred to the Rheumatology Clinic in Rafsanjan.

**Methods:** This descriptive-analytical study was performed on 70 patients referred to the Rheumatology Clinic of Rafsanjan. The sample consisted of 35 healthy individuals and 35 with rheumatoid arthritis patients. Data collection tools included demographic information, Depression, Anxiety and Stress Questionnaire (DASS21) and Pittsburgh Sleep Quality Questionnaire PSQ. After collection, the data were entered into SPSS software version 20 and analyzed using independent t-test, Chi-square and multivariate analysis of covariance.

**Results:** The score of DASS 21 questionnaire, stress, anxiety and depression in patient was significantly higher than healthy group. The mean score of total sleep and all its subscales (except mental quality of sleep) in patients was significantly higher than the healthy group ( $P = 0.001$ ). The results of multiple analysis of variance showed that the variables of sleep efficiency ( $P = 0.023$ ) and sleep disorder ( $p=0.009$ ) were statistically significant in the two groups of patients and healthy.

**Conclusion:** According to the findings of the present study, mental health and sleep quality are common problems in patients with rheumatoid arthritis; Therefore, along with standard treatments for the disease, mental health and sleep status of patients should also be considered.

**Keywords:** Mental health; Sleep quality; Rheumatoid arthritis; Depression; Anxiety; Stress; Rafsanjan



## Role of CCL2/CCR2 axis in the immunopathogenesis of rheumatoid arthritis: Latest evidence and therapeutic approaches

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Evidence suggests that uncontrolled immune system responses and their components play a significant role in developing rheumatoid arthritis (RA), which is considered an autoimmune disease (AD). Among immune system mediators, cytokines and chemokines are involved in numerous physiological and pathological processes. CCL2 or monocyte chemoattractant protein-1 (MCP-1) is known as a CC chemokine that can induce the locomotion and recruitment of monocytes and macrophages to the site of injury. When CCL2 binds to its receptors, the most important of which is CCR2, various signaling pathways are triggered, eventually leading to various immunological events such as inflammation. This chemokine also participates in several events involved in RA pathogenesis, such as osteoclastogenesis, migration of effector T cells to the RA synovium tissue, and angiogenesis. In this review article, the role of the CCL2/CCR2 axis in RA pathogenesis and the immunotherapy opportunities based on CCL2/CCR2 axis targeting has been discussed based on existing investigation.

## Assessment of the circulatory concentrations of cathepsin D, cathepsin K, and alpha-1 antitrypsin in patients with knee osteoarthritis

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**Aim:** Evidence has shown that cysteine protease enzymes, such as cathepsin D, cathepsin A, cathepsin K, and alpha-1 antitrypsin are involved in the chronic degenerative joint process. This study aimed to determine the potential involvement of cathepsin K, cathepsin D, and AAT in patients with osteoarthritis.

**Methods:** This study was performed on 31 patients with knee OA and 29 age- and sex-matched healthy subjects (both with Fars ethnicity from Iran). ACR criteria were used to diagnose OA patients. The clinical status of the patients was scored by WOMAC and pain intensity was measured by the Visual Analog Scale (VAS). The serum level of AAT was measured using high-resolution cellulose acetate electrophoresis. Additionally, serum levels of cathepsin D and cathepsin K were measured by enzyme-linked immunosorbent assay (ELISA).

**Results:** The findings showed that the serum level of cathepsin K was significantly increased in OA patients compared to healthy subjects ( $P = 0.01$ ), while there was no significant difference between serum level of cathepsin D in study groups ( $P = 0.2$ ). In addition, the serum concentration of AAT was significantly decreased in OA patients compared to healthy subjects ( $P = 0.003$ ). There was a significant correlation between WOMAC score and age ( $r = 0.644$ ,  $P = 0.0001$ ) and VAS ( $r = 0.866$ ,  $P < 0.0001$ ) in OA patients.

**Conclusion:** The decreased level of AAT in OA patients and a rise in serum level of cathepsin K are involved in the pathogenesis of OA via stimulation of bone resorption and cartilage degradation.

**Keywords:** Alpha-1 antitrypsin; Cathepsin D; Cathepsin K; Osteoarthritis

## Immunomodulatory effects of curcumin in systemic autoimmune diseases

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Systemic autoimmune diseases like rheumatoid arthritis, multiple sclerosis, and systemic lupus erythematosus represent various autoimmune conditions identified by immune system dysregulation. The activation of immune cells, auto-antigen outbreak, inflammation, and multi-organ impairment is observed in these disorders. The immune system is an essential complex network of cells and chemical mediators which defends the organism's integrity against foreign microorganisms, and its precise operation and stability are compulsory to avoid a wide range of medical complications.

Curcumin is a phenolic ingredient extracted from turmeric and belongs to the Zingiberaceae, or ginger family. Curcumin has multiple functions, such as inhibiting inflammation, oxidative stress, tumor cell proliferation, cell death, and infection. Nevertheless, the immunomodulatory influence of curcumin on immunological reactions/processes remains mostly unknown. In the present narrative review, we sought to provide current information concerning the preclinical and clinical uses of curcumin in systemic autoimmune diseases.

**Keywords:** Curcumin; Immunomodulatory Effect; Inflammation; Systemic Autoimmune Diseases

## Prevalence of metabolic syndrome in patients with gout disease refer to rheumatologic clinic during 2011-2021 in Kashan City

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**Aim:** Gout is the most common inflammatory arthritis caused by hyperuricemia and mono-sodium urate deposition in various tissues especially in joints. It presents with clinical signs of warmth, redness, and pain and definitively diagnosed by aspiration of joint fluid. Metabolic syndrome is a set of several metabolic disorders that increase the risk of cardiovascular disease. The most common criteria used for this syndrome, which is also used in this study, is NCEP-ATP III.

**Method:** In this study, 180 gout patients with an age range of 21 to 92 years were evaluated and then Patients' demographic information, the results of requested tests including blood sugar, lipid profile and the results of physical examinations including blood pressure and weight were recorded and analyzed.

**Results:** In this study, Frequency of metabolic syndrome was 55.6%, blood pressure 70%, diabetes 33.9%, obesity 33.9%, abdominal obesity 32.8% and decreased HDL 40.6%. In this study 88.3% were male and mean age of patients was  $58.41 \pm 17.2$ . The mean of BMI was  $29.6 \pm 4.14$  and 47.8% of patient was overweight, 90% patients had at least one component of metabolic syndrome. The Mean serum uric acid level do not differ between patients with and without metabolic syndrome. ( $8.5 \pm 0.18$  vs.  $7.95 \pm 0.21$ ).

**Conclusion:** According to the high prevalence of metabolic syndrome in gout patients compared to the general population and due to essential role of metabolic syndrome in the incidence of cardiovascular disease, it is necessary to consider the timely diagnosis and treatment of this syndrome in these patients.

**Keywords:** Gout; Metabolic Syndrome

## Improvement of interstitial lung disease clinical manifestations following treatment by placental mesenchymal stromal cell extracellular vesicles in a patient with systemic sclerosis: A case report

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**Aim:** Interstitial lung disease (ILD) is a very serious complication of systemic sclerosis (SSc). Yet, no definite treatment has been identified to reverse fibrosis process in SSc-associated ILD. This report aims to highlight the therapeutic potentials of placental mesenchymal stromal cell (MSC) extracellular vesicle (EVs) in a SSc patient with ILD.

**Case presentation:** In this report, we have presented a 55-year-old woman with a 10-year history of SSc complicated by severe ILD. Despite being treated with mycophenolate mofetil and then monthly pulses of cyclophosphamide, her symptoms developed and lung involvement progressed to severe interstitial fibrosis. She was treated with five doses of placenta MSC EVs. Four weeks after the third dose, she reported marked improvement of clinical symptoms such as dyspnea and cough. Also, repeated chest computed tomography (CT) scan revealed significant reduction in ground glass consolidations and fibrotic changes. The patient was followed for 6 months for investigation of sustained changes which the findings were acceptable.

**Conclusion:** The mentioned treatment significantly resulted in improvement in clinical symptoms and imaging findings. According to the results, MSC EVs could be a potentially efficient treatment for SSc-related ILD, however, further trials are necessary.

**Keywords:** Systemic sclerosis; Interstitial lung disease; Mesenchymal stromal cells; Extracellular vesicles

## Correlation of the serum levels of antiphospholipid antibodies with COVID-19 severity in patients hospitalized in Shahid Beheshti Hospital, Kashan

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**Aim:** Corona virus is a new pandemic disease that has caused widespread complications and deaths in the world. The purpose of this study is to determine the relationship between the level of antiphospholipid antibody and the severity of Covid-19 in patients admitted to hospital.

**Materials:** This study was conducted on 95 patients. The information of registered people and level of antiphospholipid antibody and severity of the disease of Covid-19 were also recorded. Then the data were compared based on independent t-test and chi-square.

**Results:** The findings of study showed that 48.4% of patients had a severe form of the disease and 51.6% had a mild form, which showed a statistically significant difference in the level of consciousness and shortness of breath between the two clinical groups. It was also found that e oxygen saturation level in severe patients was significantly lower than moderate severity, and the mean level of lupus anticoagulant and the mean level of beta-2 glycoprotein IgG in severe patients was significantly higher than in patients with moderate severity. Also, the two groups of patients were clearly different in the level of CRP, ESR, LDH, and D-dimer, so that it was higher in severe patients, and on the other hand, AST and hemoglobin were lower in this group of patients.

**Conclusion:** Level of some anti-phospholipid antibodies in patients with high severity of corona is related and can be used as therapeutic or diagnostic targets in the future.

**Keywords:** Anti-phospholipid antibody; Severity; Covid-19 disease

## Disseminated cutaneous herpes simplex infection after COVID-19 vaccination in a rheumatoid arthritis patient: A case report and review

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**Aim:** Since COVID-19 vaccination started in December 2020, different side effects were reported. The aim of this case report was to show the possibility of developing disseminated herpes simplex infection after COVID-19 vaccine in a patient with rheumatoid arthritis.

**Case presentation:** In this case report we have described a 63-year old Iranian female. She was a known case of seronegative rheumatoid arthritis presented with generalized papulopustular itchy and painful skin lesions which appeared about seven days after injecting the second dose of Sinopharm BIBP COVID-19 vaccine (BIBP-CorV). Biopsy of the skin lesions revealed acantholysis, neutrophils, and enlarged keratinocytes with eosinophilic intra-nuclear inclusions. Findings were consistent with herpes simplex infection. She was successfully treated by Acyclovir. At the end of the article we discussed the previous similar reports.

**Conclusion:** Disseminated cutaneous herpes simplex infection could be triggered after COVID-19 vaccination. Reactivation of herpes virus after COVID-19 vaccines was reported in both rheumatic patients and other individuals. Whether having an underlying autoimmune inflammatory disorder could be an additional risk factor or not is still unknown.

**Keywords:** Covid-19 vaccination; Herpes Simplex; Rheumatologic Disorder; Autoimmune disorder

## COVID-19 vaccination in rheumatic patients: A cross-sectional study from Iran

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**Aim:** Severe acute respiratory syndrome coronavirus 2 (SARS CoV2), also known as coronavirus disease 2019 (COVID-19), originated from Wuhan, China becoming an ongoing pandemic. Vaccination against COVID-19 has been started since December 2020. The most common side effects of vaccination are pain at the injection site, fever, nausea, myalgia, and malaise. The aim of this study was to investigate possible complications of COVID-19 vaccination among rheumatic patients.

**Method:** This cross-sectional study was conducted in KUMS associated rheumatology clinics to find out rheumatic patients who were vaccinated by COVID-19 vaccines. Following data was obtained from participants: age, sex, type of COVID-19 vaccine, type of rheumatic disease, medications of rheumatic disease, side effects and complications after vaccine injection. Participants were divided in to two groups (patients who developed and who did not develop complications after vaccine injection. Mentioned variables were compared between our groups.

**Results:** We found 309 rheumatic patients (mean age=49.60 ± 13.75, 81.95% female) who injected at least one dose of COVID-19 vaccine. Of these, 138 patients (44.66%) reported at least one type of complication after vaccine injection. Myalgia, fever and chills, headache, injection site pain and malaise were the most frequently observed side effects which were all self-limited. Younger patients, those who injected Oxford/AstraZeneca vaccine developed more complications. In contrast patients using prednisolone > 5mg daily had fewer complications.

**Conclusion:** We conclude that most of the vaccine complications in rheumatic patients are self-limited and similar to healthy individuals. Younger age and injecting Oxford/AstraZeneca vaccine is associated with more complications. While using prednisolone > 5mg daily could be a preventive factor.

**Keywords:** Rheumatic Diseases; Rheumatic patients; Rheumatic medications; COVID-19 vaccine; SARS-Cov-2 Vaccine; Vaccine complications and side effects



## Adherence to treatment and associated factors in rheumatoid arthritis patients: A cross-sectional study from Iran

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**Aim:** The aim of this study is to evaluate adherence to treatment and its related factors among a sample of rheumatoid arthritis patients attending rheumatology outpatient clinic of Kermanshah university of medical sciences.

**Methods:** This cross-sectional study included 257 rheumatoid arthritis (RA) patients who were asked to complete Morisky questionnaire and 19 item compliance questionnaire for rheumatology (CQR). Patients were divided into two groups of adherent and non-adherent to treatment. Demographical and clinical characteristics were compared between the two groups to investigate possible risk associations for poor adherence.

**Results:** 257 patients completed the questionnaires (mean age: 43.22, 80.2% female). 78.6% were married, 54.9% were housekeeper, 37.7% had tertiary education, 61.9% had moderate economic status and 73.2% resident urban area with large population. Prednisolone was the most commonly used drug followed by NAIDs, sulfasalazine, hydroxychloroquine and methotrexate. The mean score of Morisky questionnaire was 5.528 (SD = 1.79). 105 patients (40.9%) were adherent to treatment based on CQR questionnaire. High education level (college or university) was correlated with non-adherence to treatment (27 (25.71) vs 70 (46.05),  $P = 0.004$ ).

**Conclusion:** We concluded that prevalence of non-adherence to treatment is 59.1% in rheumatoid arthritis patients in Kermanshah, Iran. Having higher education level is a risk factor for poor treatment adherence. Other variables could not be a predictor for treatment adherence.

**Keywords:** Adherence to treatment; Rheumatoid arthritis; Iran; CQR questionnaire; Morisky questionnaire

## The relationship between osteoporosis and metabolic syndrome: A population-based study in Iran

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**Aim:** Osteoporosis is a chronic inflammatory disorder of bone that is defined by low bone mass and reduced bone quality and increased bone fragility and fractures. Promoting prevalence of metabolic syndrome (MetS) in osteoporosis subjects has been associated with drug regimen to treat the disease and also life style with low-physical activity. Here in this investigation, we attempted to assess the prevalence of MetS in patients with osteoporosis and determine the association between presentations of osteoporosis and MetS.

**Methods:** This study enrolled 400 cases with osteoporosis and 400 age- and sex-matched healthy controls. Determination of MetS was conducted by Modified ATP III criterion as well as the International Diabetes Federation (IDF). Lumbar spine, femoral neck, and total hip bone mineral density (BMD) was measured during the visit using dual-energy X-ray absorptiometry

**Results:** The prevalence of MetS was 32% in osteoporosis patients that was higher than controls (2%). Regression analysis indicated that hypertension, calcium level, fasting blood sugar (FBS), body mass index (BMI), and waist circumference (WC) were significantly associated with altered lumbar spine, femoral neck, and total hip BMD in osteoporosis patients.

**Conclusions:** We detected that the prevalence of MetS was higher in osteoporosis patients in Iran. Additionally, the risk of MetS in osteoporosis cases might be increased by cardiovascular related risk factors and obesity.

**Keywords:** Osteoporosis, Metabolic syndrome; Disease prevalence; Cardiovascular risk factors

## Prevalence and factors associated with metabolic syndrome in patients with rheumatoid arthritis: A case-control study

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**Aim:** Rheumatoid arthritis (RA) is a common form of autoimmune arthritis worldwide. promoting prevalence of metabolic syndrome (MetS) in RA patients may happened secondary to RA therapy as well as sedentary life style. This study intended to determine the frequency of MetS in RA cases and identify the association between MetS with RA disease manifestations.

**Methods:** In this study, 500 RA patients, which were diagnosed via American College of Rheumatology, and 500 age- and gender-matched healthy controls were enrolled. MetS was fulfilled through the International Diabetes Federation and the Modified ATP III criterion.

**Results:** The prevalence of MetS was 58.8% in RA patients that was higher than controls (20.4%). increased history of CVD, the familial history of CVD, hypertension, T2DM, smoking, BMI, WC, dyslipidemia, total cholesterol level, FBS, TG level, LDL level while decreased levels of HDL might increase the risk of MetS in RA patients. Multivariate regression analysis indicated that age (OR = 1.12, CI: 1.06 to 1.68,  $P = 0.004$ ), WC (OR = 1.84, CI: 1.22 to 2.11,  $P = 0.014$ ), dyslipidemia (OR = 1.94, CI: 1.45 to 2.79,  $P = 0.003$ ), LDL (OR = 1.05, CI: 1.00 to 2.10,  $P = 0.019$ ), and DAS28 (OR = 2.10, CI: 1.89 to 3.25,  $P = 0.031$ ) were independent predictors of MetS in the RA patients. Conclusions: The prevalence of MetS is higher in RA patients from Rafsanjan. Cardiovascular related risk factors might be involved in increasing the risk of MetS in RA patients.

**Keywords:** Rheumatoid arthritis; Metabolic syndrome

## Vitamin D receptor (VDR) gene polymorphism and risk of rheumatoid arthritis (RA): Systematic review and meta-Analysis

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**Aim:** Vitamin D is involved in immune system modulation as well as in calcium and bone homeostasis, hence plays a role in rheumatoid arthritis (RA) etiopathogenesis. A bulk of studies in different populations have assessed the association between the vitamin D receptor (VDR) gene polymorphisms and the risk of RA, reporting conflicting results. Therefore, we designed a meta-analysis to comprehensively evaluate the association of VDR gene polymorphisms and RA risk.

**Methods:** All potential studies reporting the association between VDR gene polymorphisms and susceptibility to RA published till February 2020 were retrieved through systematic search of database, including Scopus and MEDLINE. Strength of pooled association was determined through calculating the pooled odds ratios (ORs) and 95% confidence intervals (CIs). Subgroup analysis was performed by stratifying the studies by population type. This meta-analysis included 23 eligible studies (21 articles) overall.

**Results:** We noticed that FokI SNP had a significant protective association with susceptibility to RA in the overall analysis as well as in Europeans and Asians. TaqI SNP decreased the RA risk in Africans and Arabs, but not in the overall analysis. Likewise, BsmI SNP and RA risk in the overall population analysis was not significant. Interestingly, BsmI polymorphism increased RA risk in Africans.

**Conclusions:** This meta-analysis offers a significant association between VDR gene polymorphism and susceptibility to RA in both overall and ethnic-specific analysis. However, different polymorphisms acted inversely in increasing or decreasing RA risk in different populations.

**Keywords:** Meta-analysis; Polymorphism; Rheumatoid arthritis; Systematic review; Vitamin D receptor

## Treatment of scleredema adultorum of Buschke with intravenous immunoglobulin and mycophenolate mofetil in a 14-Year-old girl: A case report

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**Background:** Scleredema Adultorum of Buschke is a rare disease characterized by firm and non-pitting edema of the skin. The condition is rare with unknown etiology. The diagnosis is made based on clinical manifestations and histological findings. Skin biopsy shows edematous spaces between thickened collagen bundles. The epidermis is intact. While various therapeutic methods have been tried, there is no definite treatment yet.

**Case presentation:** Here, we described a 14-year old Iranian girl presented with non-pitting edema and woody thickening of the skin that progressed within a month. The sites of skin involvement were neck, trunk and limbs, but face, hands and feet were spared. She was evaluated for possible underlying malignancy or connective tissue disorders which were excluded by multiple laboratory workup. She underwent skin biopsy which confirmed the diagnosis of scleredema and she was successfully treated by intravenous immunoglobulin (IVIG) 2 gr/kg and mycophenolate mofetil.

**Conclusion:** While Scleredema Adultorum of Buschke is a rare disease with no definite treatment, our effort through this report was to highlight the possible benefits of treatment by intravenous immunoglobulin (IVIG) and mycophenolate mofetil.

**Keywords:** Scleredema adultorum of Buschke; Skin thickening, Intravenous immunoglobulin; Mycophenolate mofetil

## Clinical characteristics of patients with ocular diseases referred to rheumatologic clinics

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**Aim:** This study was designed to describe characteristics of patients with ocular diseases referred to rheumatologic clinics.

**Method:** In this retrospective study, we investigated 106 patients with ocular diseases referred to rheumatologic clinics between 2018 to 2020. Sex, age, type of ocular disease and clinical manifestation were recorded. Participants were evaluated for possible underlying rheumatologic disease. Patients were divided into two groups of with and without rheumatologic disease. Data from two groups were compared.

**Result:** 106 patients were enrolled in this study (67% women, mean age: 40.43). Most common type of involvement was anterior uveitis (35.8%) followed by posterior uveitis (20.8%), pan-uveitis (17.9%), intermediate uveitis (8.5%) and episcleritis (3.8%). In 56.6% of the patients one solitary eye was involved and both eyes were involved in the rest of the patients. Blurred vision was the most frequently reported symptom followed by ciliary congestion. 49.1% of the patients had no rheumatologic disease and were categorized as idiopathic group. Behcet was the most commonly diagnosed rheumatologic disease (21.7%) followed by ankylosing spondylitis (17.9%) and sarcoidosis (4.7%). 52.8% of the patients were treated by prednisolone and conventional DMARDs and, 29.2 were treated by prednisolone and both conventional and biologic DMARDs. Eventually, 33% of the patients achieved complete remission without relapse.

**Conclusion:** Demographical and clinical variables were compared between idiopathic and rheumatologic groups and no significant differences were observed. Also, remission rate was the same between the groups.

**Keywords:** Ocular diseases; Uveitis; Rheumatologic diseases

## Challenges in radiographic classification of knee osteoarthritis

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Osteoarthritis (OA) is the most common arthritis affecting more than 250 million people worldwide. This is a heterogeneous condition targeting hyaline cartilage in diarthrodial joints. Grading and classification of osteoarthritis is daily need in clinical practice. Several radiographical and non-radiographical classification criteria have been proposed. Kellgren and Lawrence system is more popular among clinicians. In this survey we aim to discuss on outstanding features of each system and addressing possible shortages of each. Finally we are to propose some suggestions for developing an optimal tool in clinical practise in future. We especially focus on issues of joint space narrowing, osteophyte formation and technical issues in obtaining optimal radiographic assistance.

## The effect of pilocarpine and mucosamin on Sjogren syndrome-induced xerostomia

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**Background:** Sjogren syndrome (SJS) is a systemic autoimmune disease that xerostomia is one of its major and painful clinical manifestations. Salivary stimulants and substitutes can improve subjective dry mouth sensation. This study aimed to assess the mucosamine and Pilocarpine effects on sjogren syndrome-induced xerostomia.

**Material and method:** In this quasi experimental study, 40 patients diagnosed with sjogren syndrome-induced xerostomia divided into pilocarpine mouthwash (n = 20) or mucosamin spray (n = 20) groups for 8 weeks of treatment. The endpoints were visual analogue scale (VAS scale) and Oral Health Impact Profile (OHIP-14). The statistical analysis were performed by paired t test and independent t test, using SPSS 24.0 software.

**Results:** 40 eligible participants completed the study. The mean age was  $38.38 \pm 7.59$  year. The topical treatment significantly ( $P = 0.000$ ) alleviated the symptoms of xerostomia and improved their quality of life ( $P = 0.000$ ) in both groups. There was no difference between two intervention groups ( $P = 0.098$  for VAS scale and  $P = 0.789$  for OHIP-14). **Conclusion:** Topical treatments are potential treatments for dry mouth sensation relief and improving quality of life in SJS patients.

**Keywords:** Sjogren syndrome; Xerostomia;Pilocarpine, Mucosamin; Visual analogue scale; Oral Health Impact Profile



## The relationship between level of sclerostin and turnover bone markers in hemodialysis patients at Boali Hospital in Qazvin in 2020

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**Aim:** Elevated osteocalcin levels are seen in bone diseases known as increased bone turnover. In renal osteodystrophic diseases, the concentration of osteocalcin increases. Therefore, in this study, the relationship between sclerostin levels and bone turnover markers in patients with dialysis-dependent renal failure was investigated.

**Methods:** The study was performed on 90 patients with a diagnosis of chronic renal failure and referred to Bu Ali Hospital in Qazvin. Patient profile data including age, sex, and underlying disease such as blood pressure and time of onset of hemodialysis, and factors related to bone metabolism including calcium, phosphorus, albumin, alkaline phosphatase, and parathyroid hormone and vitamin D, other bone-building factors such as alkaline phosphatase Bone alkaline phosphatase, bone resorption factor, N-terminal telopeptide (NTX) and sclerostin levels were measured.

**Results:** Serum levels of sclerostin, serum ALP and NTX were higher in women and bone ALP levels were higher in men. No significant relationship was observed between sclerostin levels and ALP and NTX markers with sex factor. In patients with underlying diabetes or hypertension, median sclerostin levels were higher but ALP and NTX markers were lower. There was a direct and significant correlation between sclerostin and NTX. NTX had low accuracy in detecting sclerostin levels.

**Conclusion:** Elevated sclerostin levels were associated with elevated levels of bone resorption markers. Identifying bone analysis markers in patients with underlying diseases is one of the most important measures that should be considered for timely diagnosis.

**Keywords:** Sclerostin; Bone resorption marker; NTX, Hemodialysis

## Comparison of serum vitamin D levels measured by ELISA and high performance liquid chromatography in patients with osteoporosis and osteopenia

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**Aim:** The standard methods of measuring vitamin D are HPLC and ELISA. There is no high agreement between these two methods to diagnose vitamin D deficiency. Considering the prevalence of vitamin D deficiency in Iran and the importance of evaluating its, we investigated the levels of 25(OH)D with the above methods in osteoporosis patients.

**Methods:** This study was conducted on the venous blood samples of 32 patients with osteoporosis and osteopenia who referred to the rheumatology clinic of Velayat Hospital in 1400. Their disorder was confirmed by BMD scan. Two methods were compared in terms of agreement in diagnosis based on Kappa index.

**Results:** Vitamin D serum level by HPLC method and ELISA method was  $49.7 \pm 16.6$  and  $16.8 \pm 45.7$  respectively. Vitamin D deficiency was 12.5% (n = 4) and its normal level was 87.5% (n = 28) by HPLC method. Vitamin D deficiency is 31.2% (n = 10) and its normal level is 68.7% (n = 22) by ELISA method. The Mean  $\pm$  SD of vitamin D was different between the two groups and was higher in the HPLC method. The level of agreement was significant at the average level of Kappa = 47.8%. Deficiency of vitamin D was detected by both methods in 12.5% and sufficient/normal vitamin D was detected by both methods in 68.7%. In 6 cases, 18.7% were false positive with ELISA method.

**Conclusion:** The use of HPLC method is recommended as a more accurate method in osteoporosis and osteopenia patients.

**Keywords:** Vitamin D; ELISA, HPLC; Osteoporosis; Osteopenia

## The anti-inflammatory and analgesic effect of the *Melissa Officinalis* in the treatment of patients with moderate rheumatoid arthritis: A pilot double-blind placebo-controlled clinical trial

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**Aim:** This randomized, pilot double-blind placebo-controlled clinical trial was designed to assess the treatment efficacy, anti-inflammatory, analgesic effect and inflammatory biomarkers of the *Melissa officinalis* versus placebo in patients with moderate rheumatoid arthritis (RA).

**Methods:** 42 eligible patients aged 20-65 with moderate RA was randomly divided into two groups: intervention and placebo. The intervention group used 500 mg of *M. officinalis* capsule twice a day and, placebo group will receive 500 mg of bread powder capsule twice daily for 8 weeks. The Disease Activity Score 28-ESR (DAS 28-ESR), DAS 28-CRP, Clinical Disease Activity Index (CDAI) and Simplified Disease Activity Index (SDAI) and also, Blood index, kidney and liver serum parameters and cytokines, interleukin (IL)-17 and tumor necrosis factor (TNF)- $\alpha$  were measured at the baseline and end of trial as primary outcome in both groups.

**Results:** 20 patients (80 % female and 20 % male) completed 8 weeks of the trial. In an intention-to-treat analysis, *M. officinalis* significantly decreased CDAI, SDAI, DAS28-ESR, DAS28-CRP, TNF- $\alpha$ , IL-17, the number of tender joint, patient and physician global health assessment at the end of intervention as compared to placebo group in moderate RA patients ( $P < 0.05$ ). No significant changes were observed in number of swollen joint, ESR, CRP, Blood, kidney and liver serum index in both group post treatment ( $P > 0.05$ ). No adverse effect were reported by the patients.

**Conclusion:** According to results, *M. officinalis* with its anti-inflammatory and analgesic effect can be considered as an efficient treatment in patients with RA and can improve inflammatory cytokines.

**Keywords:** Rheumatoid arthritis, *Melissa officinalis*; DAS-28; TNF- $\alpha$ ; IL-17; Pilot double-blind placebo-controlled clinical trial

## The efficacy of persian herbal medicine, *Marhame-Mafasel* ointment in comparison of diclofenac 1% ointment in the treatment of patients with knee osteoarthritis: A double-blind active-controlled clinical trial

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**Aim:** This randomized, double-blind active-controlled clinical trial was designed to assess the treatment efficacy and inflammatory biomarkers measurements of topical Marhame-Mafasel ointments (MMO) consist of a mixture of *Arnebia euchroma* and *Matricaria chamomilla* in comparison of Diclofenac 1% ointments (DO) in patients with knee Osteoarthritis (KOA).

**Methods:** 56 eligible patients aged 40-80 with moderate pain intensity and grade II of knee osteoarthritis based on the Kellgren and Lawrence (K & L) radiographic classification criteria was randomly divided into two groups: MMO and DO. The intervention group used 3 cm<sup>2</sup> of MMO and another group received DO for each knee three time a day for 4 weeks. As primary outcome measure pain, stiffness, and daily activity in patients with KOA was evaluated using Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questioner and Visual analogue scale (VAS) and also cytokines, interleukin (IL)-6 and tumor necrosis factor (TNF)- $\alpha$  were measured at the baseline and end of the treatment.

**Results:** 40 patients (78.5 % female and 16.6 % male) completed 4 weeks of the trial. In an intention-to-treat analysis, VAS score, pain, daily activity and total WOMAC score was statistically significant in both group at the end of trial while joint stiffness, TNF- $\alpha$  and IL-17 were significant only in MMO group after 4 weeks ( $P < 0.05$ ).

**Conclusion:** According to results, MMO had positive effects in improving symptoms such as reducing pain and daily activity and cytokines improvement in individuals suffering from KOA and was significantly better than DO 1%.

**Keywords:** Marhame-Mafasel ointmen; Diclofenac 1% ointment; knee osteoarthritis; TNF- $\alpha$ ; IL-6; Double-blind active-controlled clinical trial

## Urinary tract infection in rheumatoid arthritis patients, the causative pathogens and their antimicrobial susceptibility pattern

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**Aim:** Rheumatoid Arthritis (RA) is associated with a higher incidence of urinary tract infection (UTI), particularly among older females. Therefore, efficient UTI treatment, considering the causative pathogens and their antimicrobial resistance patterns is important.

This study was conducted to evaluate UTI, the related uropathogens, and their antibiotic resistance patterns in patients suffering from RA in Iran.

**Methods:** A 6-year study was performed among the RA patients who hospitalized in/ referred to the Loghman hospital while had or got UTI. The isolates were collected from urine samples and subjected for differential cultures. Disk diffusion method was used to evaluate antibiotic susceptibility, Multi-drug resistance (MDR), and extended-spectrum beta-lactamase (ESBL) patterns.

**Findings:** Thirty-three isolates were recovered from 31 RA patients (26 female, 5 male; 2 patients had re-infection), 2/3 of them were *Escherichia coli* followed by *Klebsiella pneumoniae* (15%). *E. coli* was the only causative pathogen in men. Resistance of these two bacteria to norfloxacin, nalidixic acid and trimethoprim/sulfamethoxazole (more than 60%) and imipenem (30%) was considerably high, but none of them were resistant to amikacin and nitrofurantoin. ESBL-producing *E. coli* and *K. pneumoniae* were 52% and 40% respectively; MDR pattern was lower (36% and 20% respectively). In the re-infection episodes of UTI in 2 women, the causative *E. coli* isolates were significantly more resistant.

**Conclusion:** It seems that antibiotic therapy of UTI in RA patients needs attention, as their resistance pattern is different compared to patients with no underlying rheumatic diseases. This might be due to their chronic disease and the long-term use of corticosteroids.

**Keywords:** Rheumatoid arthritis; Urinary tract infection; Uropathogen; Antimicrobial susceptibility

## Investigating social support effect on the severity of illness, depression, stress and anxiety in patients with systemic lupus Erythematosus who referred to the rheumatology clinic of Velayat Hospital in Qazvin in 2019-2020

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**Aim:** This study aimed to investigate the effect of perceived social support on the severity of disease, depression, stress and referring to the rheumatology clinic.

**Methods:** This cross-sectional study was conducted by 100 patients diagnosed with lupus based on SLICC criteria, including controlled (control group) and uncontrolled (active group) patients referred to rheumatology clinic of Qazvin Province Hospital between 2020 and 2021. Severity of dysles was assessed by SLEDAI-2K criteria and depression, anxiety and stress assessment index (DASS-21) and social support (MSPSS) were used. Data analysis with SPSS software version 16 and with a significant level of 0.05.

**Results:** Total of 100 lupus patients with active disease (41 cases, 41%) and control group (59 cases, 59%) with mean age of  $41.3 \pm 9.8$  years. Mean disease duration was  $7.4 \pm 9.8$  years. The total score of the MSPSS index was  $18.29 \pm 7.23$  in the active group, which had the highest amount of support from the family. There was a significant relationship between the amount of perceived social support and DASS score in patients ( $P > 0.05$ ).

**Conclusion:** The results showed that perceived social support is related to disease activity and mental disorders in lupus patients. In patients with active disease status, perceived social support was less and depression and stress were more. Evaluation of symptoms in patients with SLE can lead to improvement of patients' understanding of health status and quality of life.

**Keywords:** Systemic lupus erythematosus; Social support; Depression; Stress; Anxiety

## Evaluation of sexual function and disease severity in women with systemic lupus erythematosus referring to the rheumatology clinic of Velayat Hospital in Qazvin in 2019-2020

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**Aim:** This study aimed to evaluate Sexual dysfunction and disease severity in females with SLE referring to the rheumatology clinic.

**Methods:** This cross-sectional study was performed by 91 patients with lupus diagnosed based on SLICC criteria, including controlled patients (control group) and uncontrolled disease patients (active group) referred to the rheumatology clinic of Velayat Hospital of Qazvin between 2020-2021. Disease severity was assessed by SLEDAI-2K criteria and Female Sexual Function Index (FSFI) was used to evaluate sexual function. Data analyzed by SPSS version 16 and with significant level of 0.05.

**Results:** Total of 91 females with lupus were included with active disease (38 cases, 41.8%) and control group (53 cases, 58.2%) with mean age of  $41.3 \pm 9.8$  year. Mean disease duration was  $9.8 \pm 7.4$  year. Menopause was significant between groups (active group 22% vs. control group 27%;  $P = 0.004$ ). Family history was observed in 10.5% of active group. Total score of the FSFI index was  $49.7 \pm 26$ . About 26.4% (24 cases) of patients was satisfied with sexual function. FSFI were not significant between groups ( $p > 0.05$ ). Mean total FSFI was  $47.13 \pm 26.6$  in active group and  $51.52 \pm 25.8$  in control group.

**Conclusion:** Although FSFI index was moderate, the low percent of patients was satisfied with sexual function. FSFI was lower in active group, which is due to disease control cannot affected patients' satisfaction. It seems that this index should be considered to active patients, and treatment may not be useful for sexual satisfaction.

**Keywords:** Systemic lupus erythematosus; Sexual function; Disease Severity; Female



## Effect of topical oil-based dill extract (*Anethum graveolens* L.) On knee osteoarthritis compared with diclofenac gel: A randomized, double-blind, Controlled trial

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**Aim:** To compare the effects of topical use of oil-based Dill extract (ODE) and Diclofenac gel (DG) on the clinical symptoms of patients with knee osteoarthritis.

**Method:** Eighty-two eligible patients, were randomly assigned to two groups using ODE and DG for 4 weeks. The symptoms of pain, knee stiffness, and physical functioning of the patients were recorded using WOMAC (Western Ontario and Mc Master Universities Osteoarthritis index) questionnaire and scores of the GPA (global patient Assessment) at the beginning of the study and after two and four weeks. Consumption of Acetaminophen was also compared.

**Results:** The results indicated that the pain and the mean consumption of acetaminophen were significantly lower in the ODE group compared to the DG group ( $p = 0.02$  and  $p = 0.012$  respectively). Although the decrease in knee stiffness, improvement of physical functioning, and the improvement in the score of questionnaires after the study were more in ODE group than DG group, these differences were not statistically significant. Also, no major side effects were observed due to the use of ODE.

**Conclusion:** The present study suggested that ODE may be more effective than DG as an anti-inflammatory drug for patients with knee osteoarthritis.

**Keywords:** Knee osteoarthritis; Oil-based Dill extract; Traditional Persian medicine; Diclofenac gel



## The evaluation of metabolic syndrome components in patients with shoulder adhesive capsulitis referred to rheumatology and orthopedics clinics in Yazd, Iran in 2018-2019

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**Aim:** Patients with inflammatory shoulder disease have a long history of hypertension, dyslipidemia, high levels of LDL, and HbA1c, each of which is a component of the metabolic syndrome. Therefore, this study was performed to evaluate the parameters of metabolic syndrome in patients with AC shoulder and as a disease in which metabolic factors have a significant role in its occurrence.

**Methods:** In this study, 132 patients were diagnosed with primary adhesive capsulitis referred to musculoskeletal clinics (rheumatology and orthopedics) in Yazd from November 2018 to November 2019. Parameters related to metabolic syndrome indices were measured in these patients. Statistical analyses were performed using descriptive statistical tools (one-sample binominal test) using SPSS software.

**Results:** The patients were in the range of 34-72 years ( $54.3 \pm 7.5$ ). 72% of the patients were women. 53% of patients with shoulder adhesive capsulitis had metabolic syndrome. In this study, a statistically significant association between the risk of adhesive capsulitis of the shoulder and the risk of metabolic syndrome was found ( $P$ -value  $< 0.001$ ). Among all patients with shoulder adhesive capsulitis without a history of diabetes or without using blood sugar control drugs, 55.4% of patients had abnormal levels of HbA1c.

**Conclusions:** According to the results of this study, the prevalence of metabolic syndrome in patients with shoulder adhesive capsulitis is estimated more than the general population. Therefore, pay attention to the changeable criteria of metabolic syndrome can have a potential effect on both prevention and choice of treatment approach.

## Therapeutic efficacy of intramuscular methotrexate vs. oral naproxen in adhesive capsulitis of the shoulder: A randomized double-blind clinical Trial

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**Aim:** Adhesive capsulitis of the shoulder results in pain and restricted movement of the glenohumeral joint. Hypothesis: There would be a difference in active range of movement in the affected shoulder of patients with adhesive capsulitis after receiving a series of injections of intramuscular methotrexate.

**Methods:** This study reports the results from 31-participant, single-center, double-blind, prospective parallel-group, randomized controlled clinical trial. Inclusion criteria: over 18 years of age, unilateral idiopathic adhesive capsulitis for 1 month, but < 6 months. Exclusion criteria: recent physical therapy, injections, subacromial impingement, calcific tendonitis or glenohumeral joint arthritis in the affected shoulder. Subjects were randomized 1:1 to receive methotrexate (intramuscular, 40 mg divided by four injection) or oral naproxen (500 mg, daily for 40 days). Range of motion, pain, and shoulder pain and disability index (SPADI) score were assessed at baseline, 2, 4, and 8 weeks after initiation of the treatment.

**Results:** Overall, 43 patients were screened, 12 subjects were excluded, and 31 subjects were randomly assigned to the MTX group (n = 15) or the naproxen group (n = 15). Both control and treatment groups showed improvement in range of motion (ROM), pain, and SPADI score between baseline and 8<sup>th</sup> week. Both groups showed, SPADI score improved from the baseline of  $105.7 \pm 7.4$  (naproxen) and  $102.9 \pm 8.7$  (MTX) to  $38.5 \pm 5.6$  and  $24.0 \pm 3.7$ , respectively ( $P = 0.001$ ) at 8<sup>th</sup> week. Visual analog scale improved  $4.7 \pm 1.9$  units (naproxen) and  $4.8 \pm 1.7$  units (MTX), without difference between the two arms ( $P = 0.14$ ). ROM improved significantly over the course of the time in both study arms, with statistically significant better results in flexion and abduction, in the MTX groups. No serious patient reported adverse drug reactions was encountered during the course of study.

**Conclusions:** Intramuscular methotrexate could be even more effective in treating adhesive capsulitis of the shoulder than naproxen in improving both pain and range of motion of the afflicted shoulder, without serious side-effects.

## Frequency of fertility-related factors in women with rheumatoid arthritis referred to rheumatology clinic of Rafsanjan city, 2020

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**Aim:** Rheumatoid arthritis is a chronic disease with unknown etiology and can affect various aspects of women's lives. The present study was performed aimed to evaluate fertility-related factors in women with rheumatoid arthritis.

**Methods:** This descriptive-analytic study was performed on 100 women with rheumatoid arthritis and 100 healthy women in 2020. The diagnosis of rheumatoid arthritis was based on ACR 2010/EULAR criteria and rheumatologist approval. Demographic, fertility-related information and disease severity according to DAS.28 criteria. Data were analyzed by SPSS software (version 20) and Independent T-test and Chi-square test.  $P < 0.05$  was considered statistically significant.

**Results:** The mean duration of the disease was  $49.14 \pm 49.57$  months and the severity of the disease was moderate in half of the patients. The number of pregnancies and deliveries did not differ significantly between the two groups ( $P > 0.05$ ). A history of abortion was reported in 33% of RA women and 56% of healthy women ( $P = 0.007$ ). The history of primary and secondary infertility was less in women with rheumatoid arthritis than healthy women ( $P = 0.017$  and  $P = 0.542$ , respectively) and the use of assisted reproductive drugs was more frequent in healthy women ( $P = 0.224$ ).

**Conclusion:** In this study, pregnancy-related factors such as the frequency of abortion, history of primary infertility and the use of assisted reproductive drugs were reported less in women with rheumatoid arthritis than healthy women. It is necessary to examine these findings in future studies with more sample sizes and selection of more than one control group.

**Keywords:** Abortion, Arthritis; Infertility; Menopause; Pregnancy

## Study of the current development of rheumatology in Iran and preparation of a roadmap and future development of this field in Iran

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**Aim:** Iranian Rheumatology Association has been established as a non-profit scientific association with activities in the field of consultation, education, information, research and syndicate targets. In line with this mission, attention to the trade union issues of the members of the association is also considered. This study was designed to evaluate the current and future situation and development of rheumatology field in Iran and making a roadmap for it in the future way.

**Method:** Based on basic research, it is tried to collect data and information in the field of rheumatology from delegates active in the country about the academic, market, and business aspects, service provision, etc. The raw and analyzed data are given to experts in the field, and in a workshop, they are asked for their opinion on the future of the field. External factors are examined and finally, policies and strategies are determined by the presence of technical and opinionated people.

**Results:** We obtained documents from 230 rheumatologists in the country through a questionnaire that send based on the google doc platform. On the basic results, female to male ratio is about 59 to 41 percent. 41 percent think they should have another job for daily living needs. 72 percent selected their field with their desire but only 52% will select this field if they go back to start. 62 percent of responders think that their income is less than other internal medicine group fields. 79 percent think are not satisfied with their income.

**Conclusion:** After finding the detail of the data from questioners and obtaining country population statistical documents, we will have a meeting with experts in the rheumatology field (Focus group discussion) to evaluate the results and find the current development of rheumatology in Iran, and preparation of a roadmap and future development of this field in the country.

**Keywords:** Rheumatology; Development; Position; Roadmap; Outlook