Mgr Monika Chruściak

Ocena sprawności funkcjonalnej stopy u pacjentów z reumatoidalnym zapaleniem stawów leczonych metotreksatem i lekami II-go rzutu jak leki biologiczne lub celowane syntetyczne leki modyfikujące przebieg choroby, w porównaniu do grupy kontrolnej osób zdrowych

Rozprawa na stopień doktora nauk o zdrowiu

w dyscyplinie nauki medyczne

Promotor: prof. dr hab. n. med. Małgorzata Wisłowska – Kierownik Kliniki i Polikliniki Reumatologii Narodowego Instytutu Geriatrii, Reumatologii i Rehabilitacji im. prof. dr hab. med. Eleonory Reicher

Zakład Usprawniania Leczniczego Centralnego Szpitala Klinicznego MSWiA w Warszawie

Obrona rozprawy doktorskiej przed Radą Dyscypliny Nauk Medycznych Warszawskiego Uniwersytetu Medycznego

Warszawa 2022

Summary

Aim of the study: Rheumatoid arthritis (RA) is a chronic autoimmune systemic connective tissue disease characterized by non-specific inflammation of symmetric joints, extra-articular lesions and organ complications. Despite treatment, the disease causes progressive joint destruction, deformities and disability. The foot in the course of RA is a frequent location (about 90% of patients) of deformities. The importance of feet in everyday functioning is related to the function of locomotion. Modern treatment of severe forms of RA involves the use of methotrexate in combination with biological drugs or Janus kinase inhibitors. The aim of the study was to compare the functional efficiency of the foot in patients with RA treated with methotrexate and second-line drugs, such as biological drugs or Janus kinase inhibitors, in comparison to the control group of healthy people.

Material and methods: The analysis includes consecutive 50 outpatients with RA diagnosed on the basis of classification criteria [ACR/EULAR 2010 classification criteria] admitted to the Rheumatology Outpatients Department of the Central Clinical Hospital of the Ministry of Interior and Administration in Warsaw, in whom foot injuries, surgeries and diabetes were excluded. Foot examination was performed, BMI was determined, data such as morphology, ESR, CRP, creatinine, eGFR, bilirubin, transaminases were analyzed, foot X-ray was performed and the stage of RA was assessed according to Larsen-Dale. Manchester scale was assessed. Foot joint mobility and muscle strength were assessed and domains of FAOS and HAQ questionnaires were performed.

Results: The following deformities were observed in the study group: hammer toes (left foot 82%, right foot 76%), longitudinal flat feet (74%), hyperkeratosis (58% and 56%), hallux valgus (58% i 48%), stiff toes (38% and 32%) and overlapping fingers (28% and 48%). The Wajsflog indices of the right and left foot were 1.89±0.15 and 1.93±0.13, respectively, and were statistically significantly lower than those recorded in the control group without deformities, for which the mean values for both feet were 2.5. According to the Manchester scale, foot deformities in the lowest A class were found in 18% of patients with RA and 86% in the control group ($p<0.001$). The range of motion in the joints of the feet and the analysis of muscle strength were statistically significantly lower ($p < 0.001$) compared to the control group. In the analysis of foot function based on the results of functional tests, the worst results were observed in the squat test and the best in the tiptoe test. Hyperkeratosis especially worsened the result of the

toestand test, 59.4% of patients were unable to perform this test. With longitudinal flatfoot, as many as 64.9% of patients could not stand on their heels. The quality of life due to foot involvement was statistically significantly lower ($p<0.001$) in examined RA patients compared to the control group. Similarly, the FAOS questionnaire was worse in the RA group than in the control group in all domains ($p<0.001$). The domain of sport and recreation were the worst (median 53.0), daily activity the best (median 80.0). There was a good agreement between the FAOS and HAQ indices. Spearman's correlation coefficient for the daily activities subscale was the strongest $r=-0.85$, $p<0.001$, and moderate for the subscales of quality of life, sport and recreation and pain ($r=-0.72$; $r=0.71$, $p<0.001$).

Conclusions: The functional efficiency of the foot in patients with RA, despite treatment with methotrexate and second-line drugs such as biological drugs or targeted synthetic disease-modifying drugs, is significantly worse in comparison to the healthy controls.

1. Strength, endurance and functional capacity in patients with RA, despite treatment with methotrexate and second-line drugs such as biological drugs or targeted synthetic disease-modifying drugs, is significantly worse in relation to the healthy people in the control group.

2. Pain in patients with RA, despite treatment with methotrexate and second-line drugs such as biological drugs or targeted synthetic disease-modifying drugs, was the must stronger during going up the step and going down.

3. The frequency of foot deformities in patients with RA despite treatment with methotrexate and second-line drugs such as biological drugs or targeted synthetic disease-modifying drugs is more frequent than in the healthy controls.

4. The quality of life in patients with RA, despite treatment with methotrexate and second-line drugs such as biological drugs or targeted synthetic disease-modifying drugs, is significantly worse in relation to the healthy controls. FAOS questionnaire states the worse sport/recreation domain, specially jumping and running.