Diagnostic value of ultrasonography in bone erosion of patients with rheumatoid arthritis in comparison with plain radiography

Abstract:

Background and Objective: Rheumatoid arthritis is the most common systemic inflammatory disease of joints with global prevalence of 1% in whole life. The onset of the disease can occur in any age but its peak is between 30 and 50 years old. Disability in this disease is common and noticeable. In a cohort study in United States, 35% of people with rheumatoid arthritis experienced disability after 10 years. Radiography of the hands and feet (distal to wrist) should be performed to evaluate juxtaarticular erosive changes that is characteristic for RA. The presence of these changes can indicate of more invasive types of rheumatoid arthritis. Our person from this study is comparing the two methods of radiography and sonography in diagnosis of this disease.

Methodes and material: 111 patients with routine laboratory testes of RA, including C reactive protein and rheumatoid factor measured by nephleometry who are new cases of rheumatoid arthritis with certain diagnosis, have been randomly selected and as an example Studied. The questionnaire which includes demographic informations such as age, gender, place of residence, history of smoking, education level and history of rheumatologic disease. Then, the dominant hand and wrist radiographies in one clicke and high resolution sonography of dominant hands wrists MCP were performed. Erosion sites were registered. Erosion was recorded in graphy and the sonography at wrist and the compared with eachother and the consistency of the lesions was evaluated at the time of diagnosis.

Result: The results of this study showed that there is no significant difference between these two methods but in diagnosis of number of articular erosion and articular erosion diagnosis in persons young than 44 years old sonography had better performance, so that in persons young than 44 years old sonography had 98% and radiography had 89% diagnosis value in people older than 44 years old sonography and radiography had 96% diagnostic value.

Conclusion: this study showed that there is no significant difference in diagnostic value of sonography in bone erosion in patients with rheumatoid arthritis in comparison with radiography in terms of sex, but in diagnosis number of joint erosion and diagnosing joint erosion in persons young the than 44 years old sonography has better performance.

Keywords: Ultrasonography, bone corrosion, rheumatoid arthritis