Cardiac and Pulmonary Alterations in Patients with Rheumatoid Arthritis

Idriz Berisha1, Blerim Berisha2, Xhevdet Krasniqi2
1Rheumatology Department, Internal Clinic, University Clinical Center of Kosova, Pristina, Republic of Kosova
2Cardiology Department, Internal Clinic, University Clinical Center of Kosova, Pristina, Republic of Kosova

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SUMMARY
Introduction: cardiac and pulmonary clinical manifestations frequently absent in patients with rheumatoid arthritis (RA). The aim of this study was to evaluate cardiac and pulmonary alterations in RA among patients without clinical manifestations. Materials and methods: The study was conducted in 169 patients (127 female and 42 male, with mean age 51.6, SD± 12.7 years, P>0.05) with RA diagnosed on the basis of ACR criteria. All patients underwent a transthoracal echocardiography (TTE), a chest X-ray, an electrocardiogram and laboratory tests. Patients with clinical manifestations of cardiac and pulmonary disease were excluded from the study. Results: Pericarditis was evidenced in 16.6%, mitral regurgitation in 21.9%, aortal regurgitation in 26%, and pulmonary diffuse fibrosis in 16.6% of cases. The authors found that 158 (93.5%) of patients were CRP positive. Conclusion: Our study demonstrated that cardiac and pulmonary alterations are frequently present and prevalence of elevated CRP levels and positive serologic tests was high in asymptomatic patients with RA among patients without clinical manifestations.

Keywords: rheumatoid arthritis, cardiac and pulmonary alterations

Corresponding author: Blerim Berisha, MD. Internal Clinic- University Clinical Center of Kosova, 10000 Pristina, Republic of Kosova. Fax: +38139471600, Tel: +377 44 239 528. E-mail: dblerimberisha@yahoo.com

1. INTRODUCTION
Rheumatoid arthritis (RA) is a common chronic autoimmune disease a female predominance with prevalence 0.5-1% (1,2).

In patients with RA under therapy treatment clinical manifestations may be absent while cardiac and pulmonary lesions are in advance. Pathophysiology of rheumatoid cardiovascular and pulmonary phenomenon’s is not fully understood, but systemic inflammation is thought to play a crucial role in the endothelial damage with increased morbidity and mortality in patients with RA (3). The increased incidence of CV events in RA patients is independent of traditional CV risk factors(4). The latest studies have demonstrated consistent relationship between CRP levels and cardiovascular events (5,6,7,8,9), but presence of other cardiac damage in RA such us valvular and pericardial involvement suggest that there are many complex mechanisms responsible for CV disease in RA (10). While serositis and vasculitis may be a predominant extra-articular manifestations of RA with increased mortality (11), hypoalbuminemia is an important factor associated with the presence of asymptomatic pericardial effusion (12).

Current therapeutic treatment can suppress articular manifestations in many RA patients (13) and based on QUEST-RA study prolonged use of treatments such as methotrexate, sulphasalazine, leflunomide, glucocorticoids, and tumor necrosis factor-alfa blockers appears to be associated with a reduced risk of CV disease (14) but treatment using methotrexate may be a risk factor for progression of preclinical interstitial lung disease (ILD). ILD may be prevalent and progressive and seems to be associated also with cigarette smoking in patients having RA (15).

2. MATERIALS AND METHODS
The 169 patients (127 female and 42) with RA according to criteria of the American College of Rheumatology (16) were enrolled in University Clinic Centre of Kosova- Internal Clinic.

Detailed transthoracal echocardiography (TTE), which included an M-mode, two dimensional, color and Doppler (continuous and pulse wave) examination was performed in all patients. All patients also underwent a Chest X-ray, an electrocardiogram and laboratory tests. Patients with clinical manifestations of cardiac and pulmonary disease were excluded from the study.

3. RESULTS
Table 1 shows the characteristics of the subjects with RA enrolled in the study.

The mean age of 169 (127 female and 42 male) enrolled patients in the study was 51.6, SD± 12.7 years, P<0.05. Pericarditis (P) was present in 28(16.6%), mitral regurgitation (MR) in 37 (21.9%), aortal regurgitation (AR) in 46 (26%), and pulmonary diffuse fibrosis (PDF) in 28 (16.6%) of cases. CRP was present in 93.5%, ASTO:4.7%, W-Rose: 66.9%, Latex: 78.8%

The prevalence of cardiac and pulmonary complications seems to be higher in female

(P: 18.1% vs 11.9%, MR:24% vs 14.3%, AR:28.3% vs 19.0%, PDF: 19.7% vs 19.1%), in patients who have RA for a long time, and in patients with positive serologic tests (Latex-RF:78.7%, W-Rose:66.9%, ASO:4.7%).

4. DISCUSSION
Asymptomatic presence of cardiac and pulmonary alterations may be prevalent and progressive among pa-
Patients having RA. Patients with rheumatoid arthritis have reduced life expectancy than in the general population (17,18) and incidence of CV events is independent of traditional CV risk factors (4,19). The latest studies suggest that deaths from cardiovascular disease and pulmonary fibrosis in patients having RA were higher than expected (20). In our study we found a large group of asymptomatic patients in whom abnormalities were present and these alterations are variously combined in each patient. Cardiac alterations were predominant extra-articular manifestations of RA in asymptomatic patients and our study results (P:16.6%, MR: 21.9%, AR: 26%) were lower compared with other similar studies (21,22), but in our study population we performed TTE and higher efficacy of transesophageal echocardiography (TEE) in detecting of cardiac alterations should be considered.

Our study demonstrated that pulmonary diffuse fibrosis were present in 16.6% of asymptomatic cases, while in other studies the prevalence was 41% (23), and HRCT showed to be more efficacious than chest radiography in early detecting of lung abnormalities in asymptomatic patients having RA (15, 24, 25).

In our study most of cases with cardiac and pulmonary alterations were older and with positive serologic tests. CRP was positive in 93.5% of cases while all of them were under therapy treatment and with mild to moderate disease. The basis for the high prevalence of elevated CRP levels in RA patients with mild to moderate disease is not clear (26).

5. CONCLUSION

This study confirms that cardiac and pulmonary alterations are frequently present and prevalence of elevated CRP levels and positive serologic tests was high in asymptomatic patients with RA.

The knowledge of the presence of ‘silent’ cardiac and pulmonary abnormalities can be very important for the correct assessment and management of the patient with RA.

REFERENCES


