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RESEARCH ARTICLE

PERICARDITIS IN RHEUMATOID ARTHRITIS

Nasir Ali¹, Owais Ahmed Wani², Ouber Qayoom², Shahood Ajaz Kakroo³ and Rajveer Beniwal²

1. Consultant Cardiology, SSH, GMC Jammu.
2. DrNB Cardiology, SSH, GMC Jammu.
3. SR Cardiology, NIMS Hyderabad.

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Key words:-

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Abstract

Background : Rheumatoid arthritis (RA) is a chronic inflammatory disease of the joints, and extra-articular features are also very common . RA is associated with an increased mortality , the majority of which is originating from cardiovascular diseases . The most common cardiac involvement in RA is pericarditis . Varying the method of assessment pericarditis occurs in 30–50% of the patients.

Objective : To study prevalence of pericarditis in Rheumatoid arthritis patients , by echocardiography

Methods: A Prospective observational study , conducted in department of general medicine GMC Srinagar , from 2016 to 2018. 110 patients of rheumatoid arthritis were enrolled in this study.

Results : Out of 110 patients , 49 % had some form of heart involvement , pericardial effusion was present in 9.1 % of patients. Female to male ratio was 3.6:1 , there were 24 (22%) males and 86 (78%) females, there was no significant relationship between gender and abnormal echocardiography findings in RA patients ($p > 0.05$)

Conclusion : Prevalence of pericarditis was present in only 9.1% patients in our study , which is less compared to the previous studies. It is most likely because our patients were on DMARD and their disease was well controlled .Most of the previous studies date back to 70 and 80's , when DMARDS were not available and likely because of that pericarditis was very common.

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Introduction:-

Rheumatoid arthritis (RA) is a chronic inflammatory disease of the joints, and extra-articular features are also very common. Joint pain, swelling and limited mobility of the joint are the most prominent features.^{1, 2} Among those extra-articular features are cardiovascular diseases, including pericarditis, cardiomyopathy/myocarditis, cardiac amyloidosis, coronary vasculitis, arrhythmia, valve diseases and, most importantly, congestive heart failure and ischaemic heart disease. When compared with the general population, RA is associated with an increased mortality the majority of which is originating from cardiovascular diseases.³ The most common cardiac involvement in RA is pericarditis. Varying the method of assessment , pericarditis occurs in 30–50% of the patients. The majority of patients develop pericarditis after the onset of arthritis; however, pericarditis may precede the diagnosis of RA in some patients. Cardiovascular death seems to be associated with markers of systemic inflammation in RA, i.e. increased sedimentation rate, RA vasculitis and RA lung disease.^{4,5} Finally, it has been shown that untreated

comorbidity in patients with RA is an important problem and joint efforts of rheumatologists and cardiologists may help to improve the cardiovascular morbidity and mortality in RA.⁶

Materials And Methods:-

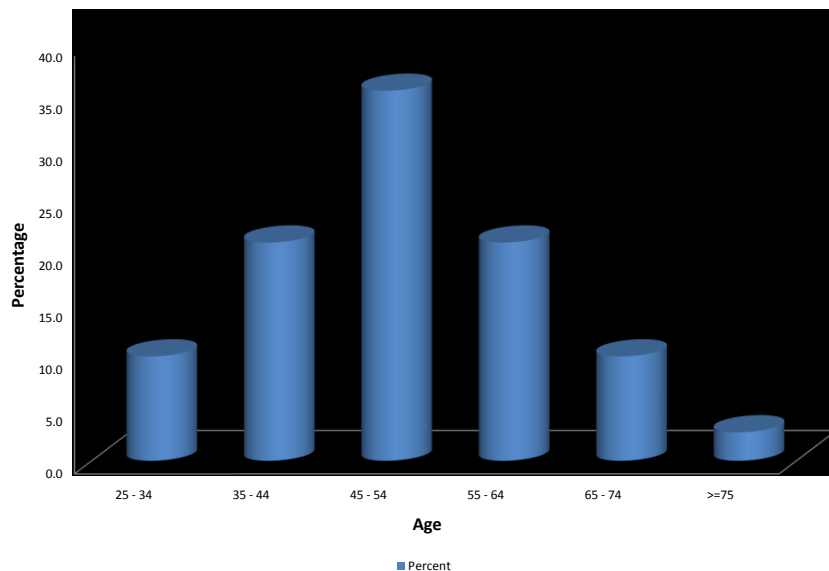
A Prospective observational study conducted in department of general medicine , GMC srinagar , from 2016 to March 2018. Study was conducted on 110 patients of rheumatoid arthritis. **Inclusion criteria** : Diagnosed cases of Rheumatoid arthritis (ACR, EULAR 2010) All patients of either sex having age >21 years. **Exclusion Criteria** : Patient with congenital heart disease. Patients with known progressive heart disease including ischemic heart disease, valvular heart disease, rheumatic heart disease, dilated cardiomyopathy. Patients with hypertension, diabetes mellitus. Pregnant patients

Patients with Other collagen vascular disease (SLE, scleroderma, polymyositis, MCTD etc). Patients with other chronic systemic illnesses COPD, CKD, CLD. . Patients were examined clinically for cardiac signs and symptoms and Patients were evaluated for cardiac manifestations by echocardiography. The recorded data was compiled and entered in a spreadsheet (Microsoft Excel) and then exported to data editor of SPSS Version 20.0 (SPSS Inc., Chicago, Illinois, USA). Chi-square test or Fisher's exact test, whichever appropriate, was used for comparison of categorical variables.

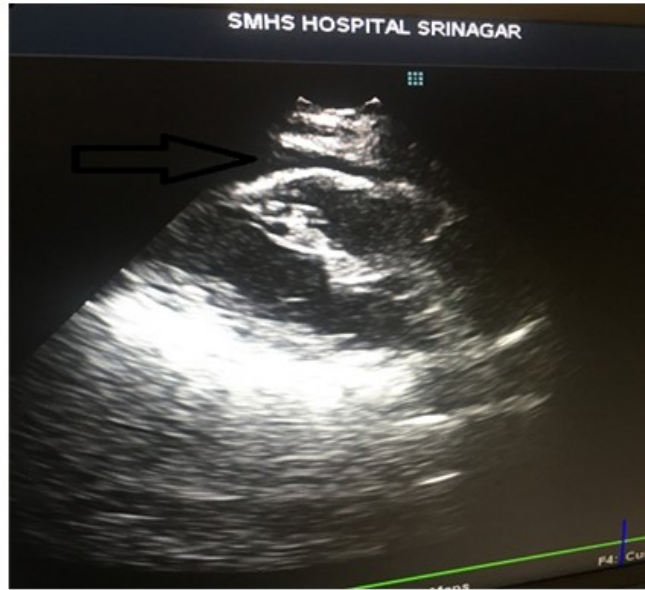
Results:-

In this study, 10% of patients were in age group of 25-34 years, 20.9% in age group of 35-44 years, 35.5% in age group of 45-54 years, 20.9% in age group of 55-64 years, 10% in age group of 65-74 years and 2.7% in age group of >= 75 years. There were 24 (22%) males and 86 (78%) females in our study with a female to male ratio of 3.6:1. Duration of illness was ≤ 5 years in 30% patients, 6-10 years in 44.5% patients, 11-15 years in 19.1% patients and >15 years in 6.4% patients in our study. In this study, echocardiography was normal in 50.9% of patients. mitral regurgitation was present in 20% of patients, aortic regurgitation was present in 15.5% of patients, tricuspid regurgitation was present in 11.8%, pericardial effusion in 9.1%, pulmonary artery hypertension in 10.9%, mitral stenosis in 0.9%, aortic stenosis in 0.9%, Systolic dysfunction in 6.3%, Cardiomyopathy (DCM) in 4.5 %, Ischemic heart disease in 4.5% and diastolic dysfunction in 14.5% of patients. Number of patients with heart disease increases with increase in duration of illness. 9 (27.3%) patients had ≤ 5 years, 23 (46.9%) patients had 6-10years, 16 (76.2%) patients had 11-15 years, and 6 (85.7%) patients had > 15 years of illness with a statistically significant P value of P = 0.001.

Age distribution of patients

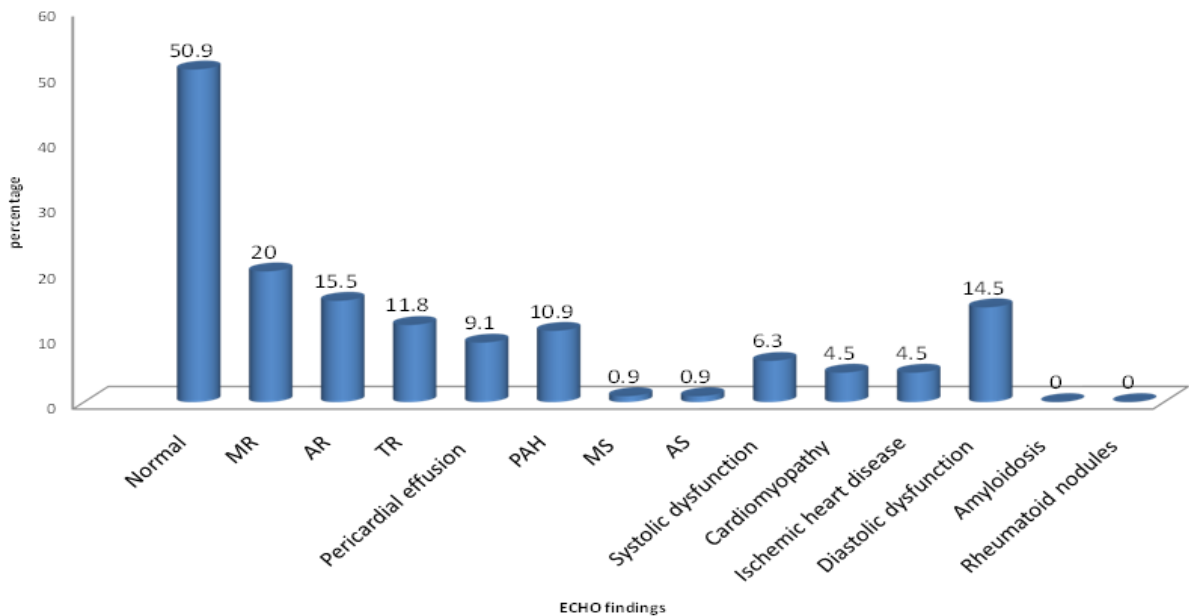


Age distribution of patients



Four chamber view 2-D echocardiogram shows pericardial effusion in 45 years old female known case of Rheumatoid arthritis for 10 years .

Distribution of study patients as per ECHO findings



Discussion:-

Out of 110 studied patients 49% had heart involvement. Mitral regurgitation was the most common heart disease present in 20% of patients, followed by aortic regurgitation in 15.5% of patients, diastolic dysfunction in 14.5% of patients, tricuspid regurgitation in 11.8% of patients, PAH in 10.9% of patients, pericardial effusion in 9.1% of patients, systolic dysfunction in 6.3% of patients, cardiomyopathy (DCM) in 4.5% of patients, ischemic heart disease in 4.5% of patients, mitral stenosis in 0.9% and aortic stenosis in 0.9% of patients. In a study done by KhaledAmer, Ahmed M. Ibrahim, Hosni A. Younis and Mohamed M. Ahmed et al (2012)⁷ heart involvement was present in 53% of patients in echocardiography. Similar results were demonstrated by Dodo-Siddo MN, et al

(2015)⁸, Nomeir AM, Turner RA, Watts LE et al (1979)⁹, Bilal Sheikhu Mohyidin et al (1998)¹⁹ and Raof R. Merza et al (2008).¹⁰ The mean age at detection of heart disease in RA was 53 ± 10.65 years, higher than mean age of studied RA patients (49.8 ± 11.5). Analysing the pattern of distribution of age in RA patients with and without heart involvement, the heart involvement increased proportionately as the age advanced. Similar results were demonstrated in a study conducted by Irandokht Shenavar Masooleh et al (2015)¹¹ and Raof R. Merza et al (2008).¹⁰ Duration of illness in our study had a marked impact over the progression of heart involvement in patients of RA. Number of patients with heart disease increases with increase in duration of illness. Study showed that 9 (27.3%) patients had disease duration of ≤ 5 years, 23 (46.9%) patients had disease duration of 6-10 years, 16 (76.2%) patients had disease duration of 11-15 years, and 6 (85.7%) patients had disease duration of > 15 years of illness, with a statistically significant P value of $P = 0.001$. Longer duration of illness had significant impact in heart involvement in study conducted by Irandokht Shenavar Masooleh et al (2015)¹¹.

Though females outnumbered males by a ratio of 3.6:1 as is characteristic of autoimmune disorder, once gender comparison of RA patients was done (Among these 110 patients, 24 (22%) subjects were male and 86 (78%) subjects were female) there was no significant relation between gender and abnormal echocardiography findings in RA patients ($p > 0.05$). The results of our studies were similar to the study conducted by Irandokht Shenavar Masooleh et al (2015)¹¹ where in his study, there was no significant relation between gender and abnormal echocardiography findings in RA patients ($p > 0.05$).

Conclusion:-

Prevalence of pericarditis was present in only 9.1% patients in our study, which is less compared to the previous studies. It is most likely because our patients were on DMARD and their disease was well controlled. Most of the previous studies date back to 70 and 80's, when DMARDs were not available and likely because of that pericarditis was very common.

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