



## A STUDY OF RHEUMATOID FACTOR AND ITS RELATION TO ISCHEMIC HEART DISEASE

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### ABSTRACT

**INTRODUCTION :** Ischemic heart disease (IHD) is a leading cause of death in the world. Most of the subjects with IHD may have traditional risk factors including diabetes, smoking, hypertension, obesity. Rheumatoid Factor (RF) has been associated with an increased likelihood of developing IHD. Presence of RF in general population may identify the subjects with a similar immune pathology to patients with RA, who may also share an increased likelihood of developing IHD and that RF may have special role in the pathogenesis of IHD.

**MATERIALS AND METHODS:** Cross sectional observational study done from September 2020 to August 2021 in Kamineni institute of medical sciences Narketpally, included 100 patients, who were all RF positive. During the study period they were evaluated for IHD by ECG and ECHO. Those who are included in the study were evaluated for traditional risk factors h/o Diabetes, smoking, family h/o IHD and hypertension, BMI for Obesity and features of RA. A resting 12 lead ECG was carried out for features of IHD. The following changes in the ECG were taken as marker of ischemia: 1) The combination of ST elevation in a set of leads and reciprocal ST depression in a set of leads. 2) Inversion of T with ST still being elevated. 3) Presence of pathological Q waves

**RESULTS :** Of the 100 patients with RF positivity, there were 65 females and 35 males. Ischemic changes in ECG in presence of RF with traditional risk factor is n=12 (75%) M 8 (50%) F- 4 (25%) and RF without traditional risk factor is n=4 (25%) M-4 (25%) F-0. In the present study there were 16 patients who had RF positivity with Ischemic changes in ECG. 12 were males and 4 were females.

**CONCLUSIONS:** RF per se can be considered as one of the risk factor for Ischemic heart disease in males.

- RF associated with traditional risk factors increase the prevalence of IHD.
- Though more female patients have positive RF, they are not vulnerable to IHD.

### KEYWORDS :

#### INTRODUCTION :

Ischemic heart disease (IHD) is a leading cause of death in the world.

Most of the subjects with IHD may have traditional risk factors including diabetes, smoking, hypertension, obesity.

Rheumatoid Factor (RF) has been associated with an increased likelihood of developing IHD

Presence of RF in general population may identify the subjects with a similar immune pathology to patients with RA, who may also share an increased likelihood of developing IHD and that RF may have special role in the pathogenesis of IHD.

#### AIM

TO STUDY THE RHEUMATOID FACTOR AND ITS RELATION TO ISCHEMIC HEART DISEASE

#### OBJECTIVES

1. To analyse the Rheumatoid factor as an additional risk factor for IHD (Ischemic heart disease)
2. To compare Rheumatoid factor between males and females in the effect of IHD (Ischemic heart disease) with or without traditional risk factors.

#### Inclusion Criteria

All patients of age between 12 years to 60 years with Rheumatoid factor positive by ELISA/Latex agglutination test.

#### Exclusion Criteria

1. Chronic infection.
2. Patients of Age > 60 years and age < 12 years.
3. Patients with thyroid abnormality.

#### PATIENTS AND METHODS

##### SUBJECTS:

Patients who are all positive to Rheumatoid factor attending

Kamineni institute of medical sciences Hospital, Narketpally between September 2020—August 2021

#### Period Of Study:

September 2020—August 2021

#### Sample Size: 100

**Design Of Study:** Retrospective observational study

#### METHODOLOGY

100 patients with rheumatoid arthritis and who were positive for RF attending attending Kamineni institute of medical sciences Hospital, Narketpally during the study period evaluated for IHD by ECG and ECHO.

Those who are included in the study were evaluated for traditional risk factors h/o Diabetes, smoking, alcohol (in the past / present) family h/o IHD and they were clinically examined for hypertension, body mass index for Obesity and features of Rheumatoid arthritis. A resting 12 lead ECG was carried out for features of IHD. The following changes in the ECG were taken as marker of ischemia

- 1) The combination of ST elevation in a set of leads and reciprocal ST depression in a set of leads.
- 2) Inversion of T with ST still being elevated.
- 3) Presence of pathological Q waves

#### Statistical Analysis:

Patients were categorized on their Rheumatoid factor positive with or without traditional risk factors and Ischemic changes.

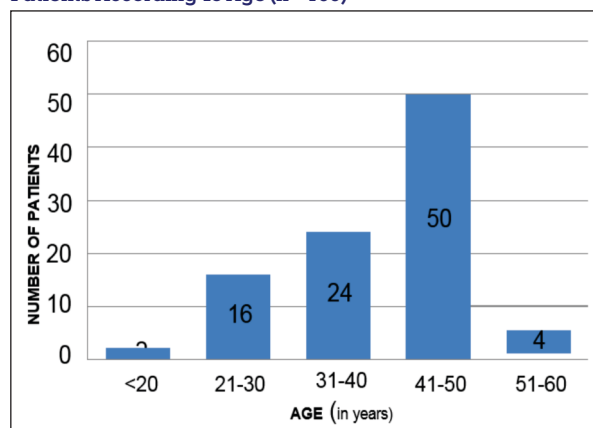
The significance of Association between the factors was collected using PEARSON CHI- SQUARE TEST

p<0.05 was taken as significant.

**RESULTS****Table 1 Distribution Of Rheumatoid Factor Positive Patients According To Age (n=100)**

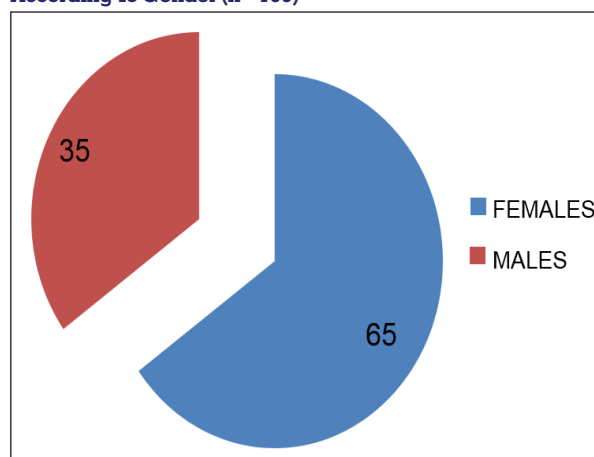
AGE	NUMBER OF PATIENTS	PERCENTAGE %
<20	2	2
21-30	16	16
31-40	24	24
41-50	50	50
51-60	8	8
<b>TOTAL</b>	<b>100</b>	<b>100</b>

In this study, maximum number of patients were in the age group of 41-50 years of age group

**CHART 1 Distribution Of Rheumatoid Factor Positive Patients According To Age (n=100)****Table 2 Distribution Of Rheumatoid Factor Positive Patients According To Gender (n=100)**

GENDER	NUMBER	%
MALE	36	36
FEMALE	64	64
<b>TOTAL</b>	<b>100</b>	<b>100</b>

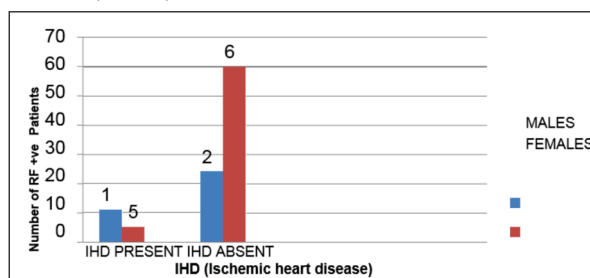
In this study, 36% of the patients were males and 64% of the patients were Females.

**Chart 2 Distribution Of Rheumatoid Factor Positive Patients According To Gender (n=100)****Table 3 Distribution Of Rheumatoid Factor Positive Patients According To Gender With Respect To Ischemic Heart Disease (n=100)**

GENDER	IHD PRESENT		IHD ABSENT		TOTAL	
	NUMBER	%	NUMBER	%	NUMBER	%
MALE	11	31.4	24	68.6	35	100
FEMALE	5	7.7	60	92.3	65	100

TOTAL	16	16	84	84	100	100
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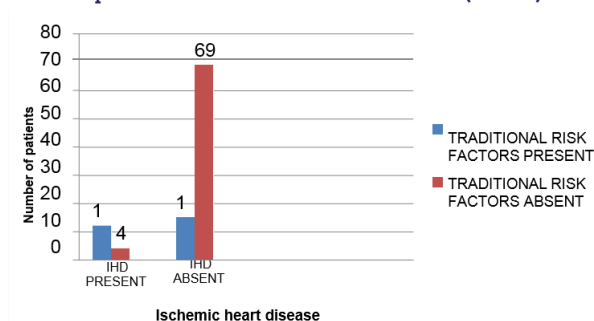
Out of 100 RF Positive patients 16 patients have Ischemic heart disease(IHD), Out of them only 5 patients are females and 11 are males.

**Chart 3 Distribution Of Rheumatoid Factor Positive Patients According To Gender With Respect To Ischemic Heart Disease (n=100)****Table 4 Distribution Of Rheumatoid Factor Positive Patients According To Gender With Respect To Ihd & Traditional Risk Factors (n=100)**

GENDER	IHD PRESENT		IHD ABSENT		TOTAL
	TRADITIONAL RISK FACTORS PRESENT	TRADITIONAL RISK FACTORS ABSENT	TRADITIONAL RISK FACTORS PRESENT	TRADITIONAL RISK FACTORS ABSENT	
MALE	7	4	10	14	35
FEMALE	5	0	5	55	65
<b>TOTAL</b>	<b>12</b>	<b>4</b>	<b>15</b>	<b>69</b>	<b>100</b>

7 male and 5 females with RF positive with traditional risk factors had ischemic changes. 4 Male RF Positive patients had IHD. By chi square test, the p value is <0.002, which is significant.

This indicating that males with RF and traditional risk factors have greater risk of IHD compared to females.

**Chart 4 Distribution Of Rheumatoid Factor Positive Patients With Respect To Ihd & Traditional Risk Factors (n=100)****DISCUSSION:**

- In the study population, most of the RF positive patients clustered between 30-50 years.
- Dividing the study population with ischemic changes by ECG, by age, 6% were below 40 years and 10% were above 40 years.
- In this study 35% were males and 65% were females.
- Comparatively females were more common in present study population.
- This is because the patients selected were suffering RA which is more common in females.
- Considering the ischemic changes, males were affected more than females though more number of female patients were included in the study. Evaluating the 16% (n=16) who were Rheumatoid factor positive with Ischemic changes 12 patients had traditional risk factors.
- The other 4 patients had only RF positivity without any

other risk factor.

- All these 4 patients were males.
- This indicates an association of RF and IHD a strong possibility especially in males.
- This study has a number of potential limitations.
- The most important fact is that this is a cross-sectional study and will need confirmation by a longitudinal cohort study.

#### CONCLUSIONS:

- RF per se can be considered as one of the risk factor for Ischemic heart disease in males.
- RF associated with traditional risk factors increase the prevalence of IHD.
- Though more female patients have positive RF, they are not vulnerable to IHD.

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