

# To Detect the Dyslipidemia in Patients with Rheumatic Arthritis

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## ABSTRACT

**Objective:** To determine the abnormalities of lipid profile in patients with rheumatic arthritis.

**Study Design:** Cross sectional study

**Place and Duration of Study:** This study was conducted in the Department of Medicine, Peoples University of Medical and Health Science, Nawabshah and MMC Mirpur khas from 2011 to 2013.

**Materials and Methods:** Total 48 patients with RA were selected. All the equitable investigation was done. The patients were chosen for the study after a brief medical history. Patients with smoking and alcohol habits, those suffering with systemic disease like diabetes mellitus, hypertension and those on corticosteroids, statins, immunosuppression and vitamins supplementation, liver, kidney, thyroid abnormalities, ischemic heart disease, pregnant and post menopausal women were excluded. Lipid profile HDL, LDL, TC and TG were checked in all the cases after an overnight fasting of 12 hours. All the data was entered in the written proforma.

**Results:** Total 48 cases were selected in the study after diagnosis of RA, mean age of the cases was found  $36.5 \pm 7.2$  years, female found in the majority 30/62.5%, mostly patients were married 35/72.9. A significant difference was found in the lipid profile, HDL was found low in majority of cases 17/35.4%, while TG was high in the majority of the patients 15/31.2%.

**Conclusion:** In the conclusion of this study dyslipidemia is highly associated with RA disease. In patients with RA disease lipid profile should be checked necessarily, to reduce the morbidity and mortality due to cardiovascular disease.

**Key Words:** Rheumatic Arthritis, Dyslipidemia, Lipid Profile.

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## INTRODUCTION

Rheumatoid arthritis the most widely challenging joint inflammation, along with lifetime predominance of up to 1% throughout the world.<sup>1</sup> Onset can happen in the any age, however tops somewhere around 30 to 50 years.<sup>2</sup> Disability is extremely numerous. In U.S. accomplice, 35% of the cases having RA disease had work incapacity after ten years.<sup>3</sup> RA is differentiated with pathways of inflammation that prompt multiplication in the joints of the synovial cells. Consequent pannus arrangement may prompt basic cartilage elimination and the bony erosions. Over manufacturing of pro-inflammatory cytokines, as well as TNF (tumor necrosis factor) and the interleukin-6, force the damaging process.<sup>4</sup> Like as different autoimmune diseases, the RA disease etiology may multifactorial. It is demonstrated that RA influences 0.51% of the grown-up populace of created regions.<sup>5,6</sup> Albeit a few patients have gentle self-restricted disease, numerous experience joint demolition, extreme physical incapacity and various co-morbidities.<sup>7</sup> Cases having

Patients with rheumatoid arthritis (RA) had big ratio morbidity and mortality than the all inclusive community, which is profoundly credited to an expanded threat of cardiovascular sickness (CVD) in the patients with RA.<sup>8</sup> lipid profile after some time and its association with serological markers and the inflammation, in cases those late developed RA.<sup>9</sup> Lipid concentrations give off an impression of being changed as a consequence of RA disease movement. Information on aggregate cholesterol (TC) and (LDL-C) levels in RA cases are incompatible: a few studies show similar<sup>10</sup> or lower concentration of TC, while others exhibit expanded concentrations of TC and LDL-C in cases with initial RA disease.<sup>11</sup> In spite of the fact that reports on lipid profiles in the cases with RA different, developing proof recommends that patients with dynamic untreated RA have decreased aggregate cholesterol TC, LDL- cholesterol, and HDL-cholesterol concentrations.<sup>12,13</sup> Despite the TC alterations in cases with RA disease, with a reduction in HDL-C, a few studies encourage the idea that RA prompts the more atherogenic lipid profile (TC to HDL-C proportion).<sup>14</sup> Aim of this series to find out abnormalities in lipid profile in patients with rheumatic arthritis.

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## MATERIALS AND METHODS

This cross sectional study was conducted at medicine department of Peoples University of medical and health science Nawabshah, and MMC Mirpur khas. Downright 48 cases with RA were chosen with the span of time from 2011 to 2013 after analyzed by 1987 reexamined criteria of the American College of Rheumatology. Informed consent was acquired from every person. Complete medical history and physical examination were carried out. All the requirable investigation were done. The patients were chosen for the study after a brief medical history. Patients with smoking and alcohol habits, those suffering with systemic disease like diabetes mellitus, hypertension and those on corticosteroids, statins, immunosuppression and vitamins supplementation, liver, kidney, thyroid abnormalities, ischemic heart disease, pregnant and post menopausal women were excluded. Lipid profile including HDL, LDL, TC and TG were checked in all the cases after an overnight fasting of 12 hours. All the data was entered in the written proforma. All the was analyzed in SPSS program version 16.0.

## RESULTS

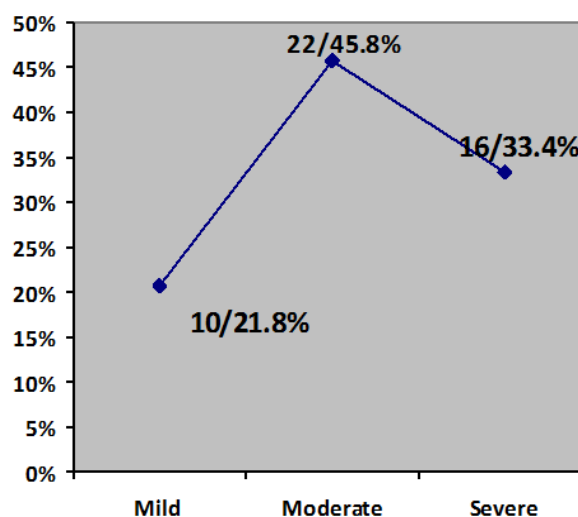
Total 48 cases were selected in the study after diagnosis of RA, mean age of the cases was found  $36.5 \pm 7.2$  years, female found in the majority 30/62.5%, while male were 18/37.5%, mostly patients were married 35/72.9%, and rural area's patients fund most common 28/58.4%. Table 1.

21.8% cases were found with mild condition, 45.8% cases were with moderate, while 33.45 cases were noted with severe condition. Figure 1.

A significant difference was found in the lipid profile, HDL was found low in the majority of the cases 17/35.4%, while TG was high in the majority of cases 15/31.2%. Table 2.

**Table No.1: Basic information of the patients n=48**

Characteristics	Frequency/%
<b>Mean age (mean<math>\pm</math>SD)</b>	
<b>Mean disease duration (mean<math>\pm</math>SD)</b>	$36.5 \pm 7.2$ years $4.2 \pm 2.1$ years
<b>Gender</b>	
Male	18/37.5%
Female	30/62.5%
<b>Marital status</b>	
Married	35/72.9%
Unmarried	13/27.1%
<b>Residence</b>	
Rural	28/58.4%
Urban	20/41.6%



**Figure No.1: Disease severity n=48**

**Table No.2: Lipid profile of the patients n=48**

Lipid Profile	Normal Frequency/%	Low Frequency/%	High Frequency/%
TC	20/39.7%	14/29.2%	14/29.2%
LDL	45/93.8%	00	03/6.2%
HDL	30/62.5%	17/35.4%	01/2.1%
TG	32/66.7%	01/1.1%	15/31.2%

## DISCUSSION

Dyslipidemias are large progressively perceived as an imperative contributory variable towards the advancement of CVD. CVD are additionally the main source of death in different various autoimmune diseases mostly Rheumatoid Arthritis. Patients having this disease length of time over 5 years have been accounted for to have 52 times more serious risk of MI than coordinated controls.<sup>15</sup> Older age and female sex are connected with expanded risk of RA, in spite of the fact that the sex differential is less conspicuous in old patients.<sup>16</sup> In the study mean age of the cases was found  $36.5 \pm 7.2$  years, similarly Nisar A et al,<sup>17</sup> mentioned mean age of patients  $34.15 \pm 7.73$  years, and he found female in the majority. Pregnancy often causes RA remission, likely because of immunologic tolerance.<sup>18</sup> As well as in present study female were 62.5%, and male were 37.5%, and mostly patients were married 72.9%. Sreekantha et al<sup>19</sup> reported mean age  $41.7 \pm 6.5$  years, and disease duration  $6.8 \pm 4.4$  years. While in this study mean of disease duration was found  $4.2 \pm 2.1$  years. Parity may have long-lasting impact; RA is less likely to be diagnosed in parous women than in nulliparous women.<sup>20</sup> We also found majority of the cases were married. Disease 21.8% cases were found with mild condition, 45.8% cases were with moderate, while 33.4% cases were noted with severe condition. Imran MY et al<sup>21</sup> reported that RA was mild in 32.35% cases, moderate in 33.33% cases and high disease activity was in 34.31% of the cases.

In a series of Toms and colleagues,<sup>15</sup> it is mentioned that patients with RA disease, were found with decreased TC, decreased LDL, decreased HDL developed the atherogenic index. Nisar A et al,<sup>17</sup> found highly of abnormal lipid profile in cases having RA as; decreased HDL in 15.3%, low TC in 13%, high TC in 20.5% and increased TG in 15.3% cases. Similarly in the present study a significant difference was found in the lipid profile, HDL was found low in the majority of the cases 35.4%, while TG was high in the majority of the patients 31.2%, TC was raised in 29.2% cases and also low in 29.2% cases. Another study of Kowsalya R et al,<sup>22</sup> stated that cases with RA had decreased HDL; raised TC and increased LDL. Hadda et al,<sup>23</sup> also reported that a big association of RA disease with lipid profile, as dyslipidemias was in 38.5% of the total study cases and decreased HDL abnormality was the most common in 34.3% of the cases. Geordiadis et al.<sup>24</sup> demonstrated that early RA showed higher TC, LDL and TG, while HDL was significantly decreased. Lakatos J et al,<sup>25</sup> mentioned significant dyslipidemia in cases having RA. Furthermore Myasoedova *et al.*<sup>26</sup> stated that decreased TC is related to high risk of cardiovascular disease, raised TG is also developed CVD event. Further he reported that in RA, link of lipids profile with CVD may be different than without RA cases.<sup>26</sup> It is conformed in our series that dyslipidemia highly linked with RA disease, but some results are different from above international studies, this may due to difference of ethnicity. While this is also mentioned in the study of Cesur et al<sup>27</sup> that patients having RA may have different results of dyslipidemia country to country.

## CONCLUSION

In the conclusion of this study dyslipidemia is highly associate with RA disease. In patients with RA disease lipid profile should be checked necessarily, to reduce the morbidity and mortality due to cardiovascular disease. Big sample size studies are needed to determine the more conformation of the abnormalities of lipid profile in patients with RA.

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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