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Prevalence of Liver Dysfunction in Rheumatoid Arthritis

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1. Background

Rheumatoid arthritis is a chronic multisystem inflammatory polyarthritis that has high morbidity (1). Liver dysfunction in rheumatoid arthritis results from the autoimmunity; drug induced liver injury, infections such as viral hepatitis or other autoimmune disease affecting the liver (2). The burden of liver dysfunction in rheumatoid arthritis is not studied in Uttar Pradesh before. This study was done out to determine the prevalence of abnormal liver function tests in outpatients diagnosed with rheumatoid arthritis at the medicine and rheumatology OPD in GSVM medical college Kanpur.

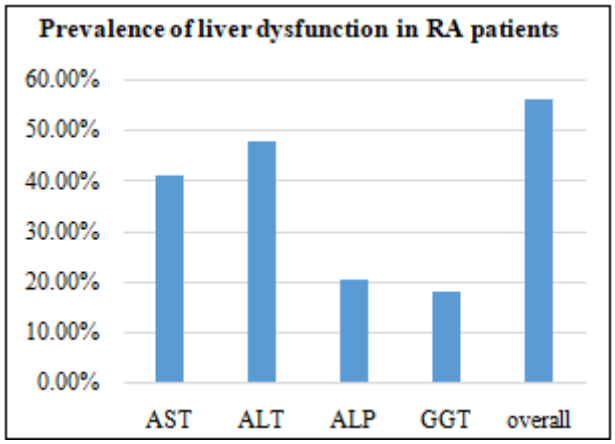
2. Methodology

This was a cross-sectional study carried out in the Department of medicine, GSVM medical college, Kanpur. The Data was taken from the study already published which studied correlation of vitamin D levels with Severity of rheumatoid arthritis (3). The liver function tests were reviewed for each patient. The prevalence of abnormal liver function tests was defined based on following cutoff: AST>=35, ALT> =30, GGT>=60, ALP>=130, Serum bilurubin > 1 mg%. Statistical analysis was done using SPSS software.

3. Results

The overall prevalence of abnormal liver function tests in the study population was 56.2%. The most common abnormal liver function tests were ALT which was raised in 47.7% of patients with mean levels being 44.84±31 upper limit of 30 IU/L, Abnormal AST was seen in 40.9 % with mean value of 47.1±37 and upper limit being 35 IU/L. The ALP was elevated in 20.5 % of patients with mean value of 113±77 IU/l. GGT was elevated in 18.2 % of patients with mean value of 43.8±21. Only 11 patients had history of significant alcohol intake, with all patients having AST> ALT.29 patients were on methotrexate at the time of enrollment for > 3 months duration. The Mean DAS28 score was 4.8±1.2 and mean vitamin D levels were 16±8.9. The mean serum bilurubin level was 0.6+_0.3. only 3 (6.8%) patients had elevated bilurubin levels, but none had clinical jaundice.

Variable (n=44)	Value
Age (yr)	42±7.2
BMI	26±3.9
Female (%)	38 (86.6%)
Male (%)	6 (13.4%)
Hb (gm%)	11.3±2.5
Platelet (10 log3/ul)	212±56
Bilurubin (mg%)	0.6±0.3
AST (u/l)	47±37
ALT (u/l)	44.8±31
Albumin (g/dl)	3.8±1.2
ALP (u/L)	113±77
GGT (u/l)	43.8±21
Methotrexate therapy> 3 months	29 (65.9%)
Alcohol intake>40gm/day	11 (25%)
Steatosis in Ultrasound	17 (38.6%)



4. Conclusion

The study was conducted in tertiary care centre Kanpur, India. The prevalence of liver dysfunction in RA patients is quite common. (5) Still there is scarcity of data on liver dysfunction in RA patients. The liver dysfunction can be caused by primary auoimmune disease i. e AIH, NAFLD, alcoholism; drug induced liver injury (6). Since we had performed a retrospective analysis of Data with a aim to study the prevalence of liver dysfunction, etiological segregation was difficult. The prevalence of liver dysfunction in RA patient is quite common (56.2%) in our study and there is need for evaluating the etiologies of liver dysfunction in this group of patients. Our study showed that not only trasamininases but also cholestatic enzymes can be elevated in RA patients. Since 70% patients were on Methotrexate, Drug induced liver injury may have been most common etiological factor but Liver biopsies were not available, also the serial LFT after modifying drug doses can help identifying DILI over AIH. Only 25% of patients had history of Alcoholism and all such patients had AST more than ALT. Considering such high prevalence of liver dysfunction in RA patient LFT should be regularly monitored and whenever necessary liver biopsy should be obtained to establish cause of liver disease.

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