

# Prevalence of thyroid dysfunction in patients with Rheumatoid Arthritis

L.A. Shakerdi, W. H. Neameh, and S. Hamdoon

University of Aleppo

## Introduction

Rheumatoid arthritis (RA) is the most common inflammatory arthritis affecting about 0.75% of general population (1). Genetic susceptibility, abnormal autoimmune response, some environmental or biologic factors, such as hormonal changes or viral infection is known to trigger RA (2). The coexistence of thyroiditis and RA has been the subject of debate for years and some workers (3) have suggested that thyroid dysfunction might exacerbate rheumatoid disease and a destructive arthropathy, mainly of the proximal interphalangeal joints. A hormonal dysfunction and/or autoimmune thyroid disease (ATD) are present in 6% to 33.8% patients with rheumatoid arthritis (RA) (4). The objective of the present study was to investigate the prevalence of clinical and laboratory abnormalities associated with thyroid gland in a population of RA patients, and a possible association between these abnormalities and the activity of RA.

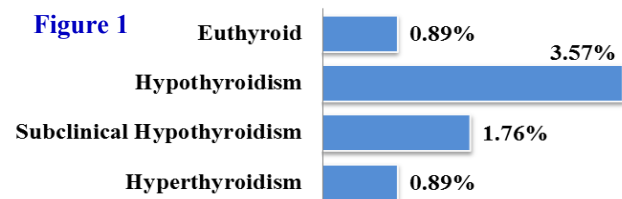
## Materials and Methods

**Patients:** The current study was conducted at Aleppo University Hospital. Patients attending the rheumatology outpatient clinic diagnosed with rheumatoid arthritis where enrolled in the study. 112 patients were diagnosed with RA, (38 males and 74 females). The patients presenting with RA underwent clinical examination, and laboratory evaluation for serum Free T3, Free T4, TSH, TPOAb, and antithyroglobulin antibody.

**Biochemical methods:** All hormones were measured by radioimmunoassay (Immunochemical analyzer Cobas e 411 HITACHI Hoffman Le Roche Company (Switzerland). Statistical analysis was performed using SPSS for windows program. A p-value < 0.05 was considered as significant.

## Results:

RA patients included 38 males (33%) and 74 females (67%). The mean age of all patients was  $33.1 \pm 6.1$  (Table 1). Percentage of thyroid dysfunction in patients with RA is depicted in figure 1. Prevalence of thyroid antibodies is shown in table 2.



**Table 1 Coexistence of thyroid dysfunction in RA patients**

Thyroid disease	RA No (%)	Mean age (years)
Hyperthyroidism	1 (12.5)	34.5
Subclinical Hypothyroidism	2 (25)	33.7
Hypothyroidism	4 (50)	39.5
Euthyroid	1 (12.5)	24.8
<b>Total</b>	<b>8 (100)</b>	<b>33.1</b>

## Discussion

Although the cause of RA is unknown, autoimmunity plays a fundamental role in its chronicity and progression. The relationship between RA and the thyroid gland has been studied considerably, with several studies demonstrating the autoimmune nature of thyroid dysfunctions in RA (4). In the present study, we found increased frequency of thyroid dysfunction in RA patients. Primary hypothyroidism and subclinical hypothyroidism were the most common alterations among RA patients. Thyroid dysfunction was found three times more prevalent in women with RA than in women with non-inflammatory rheumatic diseases. Soy et al were able to detect various rheumatic diseases in ATDs patients, two of which were vitiligo and RA (5). The incidence of thyroglobulin Ab and TPOAb in RA patients in this study was 3.57% and 6.25% respectively which agrees with other studies (6).

**Table 2 Prevalence of thyroid antibodies in RA patients**

Thyroid antibodies	RA No (%)
Thyroglobulin Ab	4 (3.57)
TPOAb	7 (6.25)
Thyroglobulin Ab + TPOAb	4 (3.57)

## Conclusion:

Thyroid dysfunction was more frequent in RA patients. Subclinical hypothyroidism and primary hypothyroidism were the most common alterations among RA patients. These results indicate that it is clinically important to screen patients with RA for the coexistence of thyroid autoimmune disease and vice versa. Further studies are required to examine the prevalence of other connective tissue disease in patient with thyroid dysfunction.

## References

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