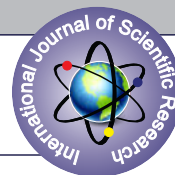


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SEARCHING FOR THE INTERPLAY BETWEEN ANTI CCP ANTIBODY WITH ANTI THYROPEROXIDASE ANTIBODY AND THYROID STIMULATING HORMONE IN PATIENTS WITH RHEUMATOID ARTHRITIS: A HOSPITAL BASED OBSERVATIONAL CROSS-SECTIONAL STUDY.



Biochemistry

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ABSTRACT

Introduction: Rheumatoid arthritis is a multisystem inflammatory disorder of autoimmune origin prevalent in female population. It is also known that rheumatoid arthritis also affects different endocrine glands. Our interests of research involve the thyroid dysfunction of autoimmune origin as reflected by rise in anti TPO antibody titre and the TSH level in them. So, whether RA can cause serious dysfunction of thyroid gland and warrants early diagnosis and initiation of specific treatments is the goal of our study.

Materials And Method: We have selected 75 of female aged between 20 to 60 years as newly diagnosed case of RA following the ACR / EULAR criteria which primarily relies on increased anti CCP antibody level. We measure the anti TPO antibody and TSH levels among the cases. We also want to study the association in the form of correlation between anti TPO and anti CCP antibodies.

Results: We have found increased prevalence of anti TPO antibody among newly diagnosed cases of RA in our study population. Also, we have found a strong positive correlation between anti CCP antibody with anti TPO antibody and TSH.

Conclusion: Thus, we can conclude that there is an increased prevalence of anti TPO antibody which signifies thyroid dysfunction of autoimmune origin is seen in female RA patients of my study population. Also, we have found that there is rise of anti TPO antibody and TSH, in the same direction with that of anti CCP antibody, corroborating previous study results. So, we can conclude that this spectrum of RA can cause dysfunction of autoimmune origin of different endocrine glands especially thyroid gland. So, for early diagnosis and initiation of treatment, we have to look simultaneously anti CCP and anti TPO antibody level to clinch the proper remedies.

KEYWORDS

Anti TPO, Anti CCP, ACR/EULAR criteria, TSH

INTRODUCTION:

Rheumatoid arthritis is a multisystem inflammatory disorder of autoimmune origin prevalent in female population.

It is also known that rheumatoid arthritis also affects different endocrine glands. Increased prevalence of thyroid dysfunction is noted in patients with Rheumatoid arthritis.

As per literature review prevalence of anti TPO antibody can rise up to 37% in patients with Rheumatoid arthritis and it has been noted in Indian population also.

Our interests of research involve the thyroid dysfunction of autoimmune origin as reflected by rise in anti TPO antibody titre and the TSH level in them.

So, whether RA can cause serious dysfunction of thyroid gland and warrants early diagnosis and initiation of specific treatments is the goal of our study

The etiology of Rheumatoid arthritis (RA) is still very unknown. RA is characterized by symmetric chronic inflammatory polyarthritis, results in cartilage and bone damage with disabilities.

RA as a systemic disease may also cause different extra articular manifestations such as interstitial lung disease, pericarditis, vasculitis and involvement of others endocrine gland.

Thyroid dysfunction of autoimmune origin is sometimes found and often clinically missed in patients with RA. As per literature evidence prevalence of thyroid dysfunction with or without autoimmune origin has been reported in 6% to 34% of patients with RA.

The etiology of coexistence of RA with AITD have not been fully understood, however some literature have shown that they share some common genes such as HLA-DRB1, PTPN22, CLTA4 and so on.

So the aim of this study is to determine whether thyroid dysfunction of autoimmune origin as reflected by rise of anti TPO antibody titre and TSH level, is found with increased frequency in patients with Rheumatoid arthritis.

MATERIALS & METHODS:

- Study Design:** Observational cross sectional study

- Place of study:** Outpatient department (OPD) **Rheumatology** and
- Clinical Biochemistry**, Medical College, Kolkata.
- The Age group** for the study was **20 to 60 years**.
- Sex : Female**
- Study Population:** newly diagnosed cases of Rheumatoid arthritis as per 2010 ACR-EULAR criteria.

Sample Size: 75 no of cases of Rheumatoid arthritis **SPSS software version 22.0** was used for statistical analysis. A p value < 0.05 was considered statistically significant.

RESULT AND DISCUSSION

BIOCHEMICAL VARIABLES

Anti CCP: measured by ELISA (Normal Range <5RU/ml)

Anti TPO: measured by CLIA (Normal Range <35IU/ml)

Thyroid Stimulating Hormone: measured by CLIA (Normal Range 0.4-4.78mIU/ml).

Table No 1: Prevalence Of Anti TPO And TSH

Variables	Mean	No of Cases above cut off value	Prevalence
Anti TPO	45.38±22.76	27	36%
TSH	4.37±2.85	19	25.33%

Mean value of anti TPO antibody & TSH is 45.38 & 4.37 respectively in our study population. Prevalence of anti TPO antibody & TSH is 36% & 25.33% respectively which is higher than healthy population as per literature evidence. We have also found a strong positive correlation between Anti TPO and Anti CCP antibody as evidenced by p value.

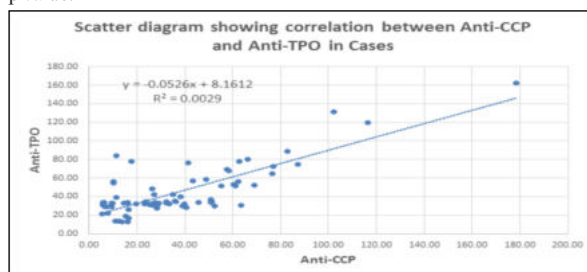
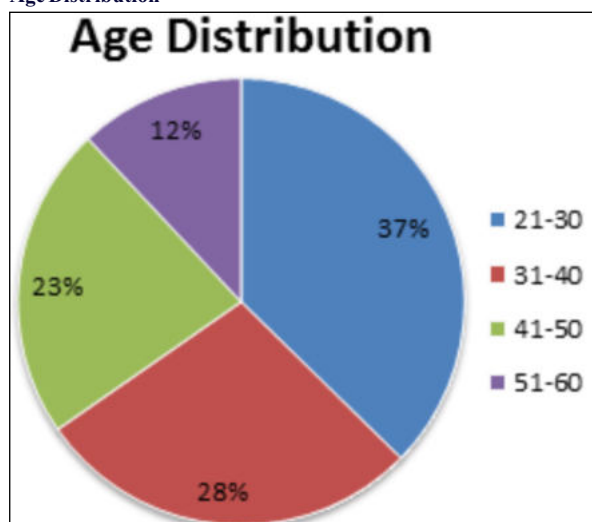


Figure1: Scatter diagram showing correlation between Anti-CCP and Anti-TPO

Age Distribution**SUMMARY AND CONCLUSION**

Thus, we can say that there is an increased prevalence of anti TPO antibody which signifies thyroid dysfunction of autoimmune origin is seen in female RA patients of my study population. Also, we have found that there is rise of anti TPO antibody and TSH, in the same direction with that of anti CCP antibody, corroborating previous study results. So, we can conclude that this spectrum of RA can cause dysfunction of autoimmune origin of different endocrine glands especially thyroid gland. So, for early diagnosis and initiation of treatment, we have to look simultaneously anti CCP and anti TPO antibody level to clinch the proper remedies.

The Limitations Of The Present Study Are As Follows :-

- 1) The study was undertaken in only 75 individuals suffering from Rheumatoid arthritis which is a very small group. So, statistical correlation and linearity cannot be assessed properly.
- 2) Confounding factors were not taken into account for this particular study.

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REFERENCES

1. Vikram Haridas, Kiran Haridas. Prevalence and clinical use of Anti thyroid antibodies in RA patients: A Prospective Case Control Study. Journal of The Association of Physician of India; vol 66; May 2018
2. Amir Emamifar, Jorgen Hangaard, Inger Marie Jensen Hansen. Thyroid disorder in patients with newly diagnosed Rheumatoid arthritis is associated with poor initial treatment response evaluated by DAS28-CRP. www.md-journal.com; January 017.
3. KUMAR BS, NAIK GS, MOHAN A, KUMAR DP, SURESH V, SARMA KVS. The prevalence of thyroid disorder and metabolic syndrome in adult Indian patients with Rheumatoid arthritis. JCLIN SCI RES 2014; 3: 97-105.
4. Teresa Cristina Martins Vincente Robazzi, Luis Fernando Fernandes Adan. Autoimmune thyroid disease in patients with rheumatic diseases. REV BRAS RHEUMATOL 2012, 52(3): 417-430.
5. A.P. ANDONOPOULOS, V. SIAMBI, M. MAKRI, M. CHRISTOFIDOU, C. MARKOU, A.G VAGENAKIS. Thyroid function and immune profile in Rheumatoid arthritis, A controlled study. Clinical Rheumatology, 1996, 15, N6:599-603.