

THYROID FUNCTION AND ANTITHYROID AUTOANTIBODIES IN PATIENTS WITH CONNECTIVE TISSUE DISEASES

Irena Kostić¹, Snežana Živančević-Simonović¹, Mirjana Bukilica², Ljiljana Dimitrijević³

¹Institute of Pathophysiology, School of Medicine, University of Kragujevac, ²Institute of Rheumatology, Belgrade, ³Institute of Immunology and Virology – Torlak, Department of Research and Development, Vojvode Stepe 458, 11152 Belgrade, Serbia and Montenegro

FUNKCIJA ŠTITASTE ŽLEZDE I PRISUSTVO ANTITIREOIDNIH AUTOANTITELA KOD BOLESNIKA SA SISTEMSKIM BOLESTIMA VEZIVNOG TKIVA

Irena Kostić¹, Snežana Živančević-Simonović¹, Mirjana Bukilica², Ljiljana Dimitrijević³

¹Institut za patološku fiziologiju, Medicinski fakultet, Univerzitet u Kragujevcu, ²Institut za reumatologiju, Beograd, ³Institut za imunologiju i Virusologiju – Torlak, Odeljenje za istraživanje i razvoj, Beograd, Srbija

Received/Primljen: 17.05.2006. Accepted/Prihvaćen: 09.06.2006.

ABSTRACT

Autoimmune thyroid disease (ATD) has been described in patients with connective tissue diseases (CTD). The aim of this study was to estimate and compare the prevalence of ATD in a group of 91 CTD patients, and in their subgroups: 53 systemic lupus erythematosus (SLE), 24 rheumatoid arthritis (RA), 7 primary Sjogren's syndrome (SSy) and 7 progressive systemic sclerosis (SSc) patients. A control group of 34 healthy blood volunteers was used for comparison. Serum levels of free thyroxine (FT4), thyroid stimulating hormone (TSH), as well as thyroid autoantibodies (Abs) specific of thyroperoxidase (TPO) and thyroglobulin (TG) were examined. CTD patients, in general, as well as SLE and RA subgroups, had significantly higher number of thyroid dysfunction than the control group ($p < 0.05$). The most prominent thyroid dysfunction was subclinical hypothyroidism, with a higher prevalence in all subgroups of patients when compared to the control. Anti-TPO Abs were detected in a significant number of CTD patients, especially in SLE subgroup when compared to the control group. It was also found that a higher number of CTD patients, SLE and RA subgroups, had positive anti-Tg Abs, when compared to the control subjects. In conclusion, the prevalence of ATD in CTD patients was more frequent than in the control group. The patients with anti-TPO Abs and anti-Tg Abs at the time when they were analyzed, had hyperthyroidism, hypothyroidism or were clinically and biochemically euthyroid. The prevalence of hypothyroidism was greater than the prevalence of hyperthyroidism in all subgroups of patients.

Key words: connective tissue disease, hyperthyroidism, hypothyroidism, autoantibodies

Abbreviations: Abs - antibodies, ATD - autoimmune thyroid disease, CTD - connective tissue diseases, DAS - Disease Activity Score, ECLAM - European Consensus Lupus Activity Measurement, FT4 - free thyroxine, RA - rheumatoid arthritis, SLE - systemic lupus erythematosus, SSc - systemic sclerosis, SSy - Sjogren's syndrome, TG - thyroglobulin, TPO - thyroperoxidase, TSH - thyroid stimulating hormone

SAŽETAK

Autoimunske bolesti štitaste žlezde (AITD) opisane su kod bolesnika sa sistemskim bolestima vezivnog tkiva (SBVT). Cilj ovog rada bio je da se ispita prevalencija AITD u grupi od 91 bolesnika sa SBVT, koja je uključila 53 bolesnika sa sistemskim eritemskim lupusom (SLE), 24 obolelih sa reumatoidnim artritisom (RA) i po 7 obolelih od primarnog Sjogrenovog sindroma (SSy) i progresivne sistemske skleroze (SSc). Kontrolnu grupu ispitanika činila su 34 dobrovoljna davaoca krvi. Kod svih učesnika u studiji merene su serumske koncentracije slobodnog tiroksina (FT4), tireostimulišućeg hormona (TSH), kao i autoantitela specifičnih za tireoperoksidazu (anti-TPO At) i tireoglobulin (anti-Tg At). U grupi bolesnika sa SBVT, kao i u podgrupama obolelih od SLE i RA, nađena je statistički značajno veća učestalost poremećaja funkcije štitaste žlezde u odnosu na kontrolnu grupu ($p < 0.05$), a od svih poremećaja funkcije štitaste žlezde najčešće je detektovana subklinička hipotireoza. Anti-TPO At nađena su kod značajno većeg broja bolesnika sa SBVT i SLE, u odnosu na kontrolnu grupu. Isto tako, i anti-Tg At su detektovana kod većeg broja ispitanika u grupi SBVT, i podgrupama SLE i RA, nego kod zdravih osoba. U zaključku, prevalencija AITD kod obolelih od SBVT veća je nego u kontrolnoj grupi. Bolesnici sa anti-TPO At i anti-Tg At u vreme kada su analizirani, imali su subkliničku ili klinički manifestnu hipotireozu ili hipertireozu, ili su još bili u stadijumu bolesti u kome se ne može detektovati poremećaj funkcije štitaste žlezde. Prevalencija hipotireoze bila je veća od prevalencije hipertireoze u svim podgrupama bolesnika sa SBVT.

Ključne reči: sistemske bolesti vezivnog tkiva, hipertireoza, hipotireoza, autoantitela

Skrćenice: Abs - antibodies, ATD - autoimmune thyroid disease, CTD - connective tissue diseases, DAS - Disease Activity Score, ECLAM - European Consensus Lupus Activity Measurement, FT4 - free thyroxine, RA - rheumatoid arthritis, SLE - systemic lupus erythematosus, SSc - systemic sclerosis, SSy - Sjogren's syndrome, TG - thyroglobulin, TPO - thyroperoxidase, TSH - thyroid stimulating hormone

INTRODUCTION

The occurrence of ATD during the course of non-organ-specific CTD including SLE, RA, primary SSy and progressive SSc, is more frequent than previously believed (1). Since the first articles about the association of silent thyroiditis with SLE (2-4), RA (5,6), primary SSy (7,8) and progressive SSc (9,10) were reported, there has been an interest in detecting the prevalence of thyroid disturbances, as well as the presence of antithyroid autoantibodies in patients with CTD, even in those who did not have clinically overt thyroid disease. A number of up-to-date studies have suggested that thyroid disease is more common in CTD patients than in the general population, but the prevalence of hypothyroidism or hyperthyroidism is a heated topic of discussion (12, 13).

In this article the prevalence of both, the hypothyroid and hyperthyroid disease, together with the prevalence of antithyroid autoantibodies in the group of CTD patients, in SLE, RA, primary SSy, and progressive SSc subgroups, are reported.

PATIENTS AND METHODS

Fifty-three SLE patients and twenty-four RA patients fulfilling four or more of the revised classification criteria of the American Rheumatism Association for these disorders were selected for the study. SLE disease activity was assessed using the European Consensus Lupus Activity Measurement (ECLAM). Patients from the RA group were found to be in a non-aggressive stage of disease based on the Disease Activity Score (DAS). All seven SSy patients in this study met the European consensus

Correspondence:
ass dr Irena Kostić
Institute of Pathophysiology, School of Medicine,
University of Kragujevac,
Svetozara Markovića 69, 34 000 Kragujevac, Serbia and Montenegro
phone: + 381 34 370 137, fax: + 381 34 306 800
e-mail: irena8@ptt.yu

