

# Endocrine Abstracts

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# Endocrine Abstracts

## 24th European Congress of Endocrinology 2022

European Society of Endocrinology

21–24 May 2022, Milan, Italy

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1600 Bristol  
Parkway North  
Bristol BS34 8YU, UK

Tel:  
Fax:  
E-mail:  
Web site:

+44 (0)1454 642247  
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25 cases and full thyroid recovery or chronic thyroiditis/hypothyroidism were observed in 72% and 28% of cases, respectively. From June to December 2021, the percentage of SAT in files was 1.5%. SAT diagnoses increased ( $P=0.03$ ) in 2021 in comparison with the 2000-2020 period. The median age of SAT patients in 2021 (54 years; 50-61) was higher ( $P=0.05$ ) than in the 2000-2020 period. To date, 6 women have been followed up for 2-4 months. In 2 women, a decrease in thyroid volume was noted, while in 4, TSH was suppressed or increased; in the remaining 2, L-T4 was ongoing. Pain, palpitation, fatigue and sweating disappeared after prednisone/NSAIDs discontinuation. To date, 19 cases (91% females; median age 40 years) of SAT after COVID-19 vaccinations have been described in the literature, with sub-clinical, normal or increased thyroid function in about 29%, 53% and 12% of cases, respectively, during follow-up. Our findings and the literature data indicate that SAT after COVID-19 vaccination is more frequent in females and at greater age than that occurs in other virus-related SAT cases. In our experience, thyroid function remains undefined after 2-4 months. Our observation of a local increase in SAT during the 2021 COVID-19 vaccination campaign indicates that physicians should be aware of this infrequent side effect, which must be considered and monitored after COVID-19 vaccination.

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**P225****Comparison in lipid parameters before and after L-thyroxine treatment in subclinical hypothyroidism according to the presence of thyroid peroxidase antibodies**

Valentina Velkoska Nakova<sup>1</sup>, Brankica Krstevska<sup>2</sup>, Katerina Cheshlaroska Markushoska<sup>3</sup>, Sasha Jovanovska Mishevska<sup>4</sup> & Tatjana Milenkovic<sup>4</sup>  
<sup>1</sup>Clinical Hospital, Faculty of Medical Science, University Goce Delcev, Internal Medicine, Stip, Macedonia; <sup>2</sup> Internal Medical Center "Srce", Skopje, Macedonia; <sup>3</sup> General Hospital "Borka Taleski", Internal Medicine, Prilep, Macedonia; <sup>4</sup> University Clinic of Endocrinology, Diabetes and Metabolic Disorders, Skopje, Macedonia

**Objective**

Subclinical hypothyroidism (ScH) is a common condition and may be associated with dyslipidemia. We investigated the effect of levothyroxine therapy (L-T4) on lipid parameters in patients with a mild form of subclinical hypothyroidism according to the presence of thyroid peroxidase antibodies (anti-TPO antibodies).  
**Material and methods**

Fifty-seven patients with newly diagnosed ScH (TSH levels between upper reference value and 10 mIU/l with normal FT4 and FT3 values) with indications for L-T4 therapy were included in the study. Lipid parameters and presence of anti-TPO antibodies were evaluated at the moment of diagnosis and after 6 months euthyroid stage.

**Results**

Average value of TSH was  $8.1 \pm 1.9$  mIU/l. Thyroid substitution therapy significantly decreased total cholesterol and LDL-C, and increased HDL-C ( $5.6 \pm 0.9$  vs.  $5.3 \pm 1.1$ ;  $3.4 \pm 1.0$  vs.  $3.2 \pm 1.1$ ;  $1.5 \pm 0.5$  vs.  $1.6 \pm 0.5$  mmol/l,  $P < 0.05$  respectively). Statistically significant decrease in total cholesterol, total cholesterol/HDL-C, and LDL-C/HDL-C were observed in patients with positive anti-TPO antibodies after 6 months euthyroid state ( $5.5 \pm 1.1$  vs.  $5.3 \pm 0.9$  mmol/l;  $3.9 \pm 1.5$  vs.  $3.5 \pm 1.0$ ;  $2.5 \pm 1.2$  vs.  $2.2 \pm 0.8$ ,  $P < 0.5$  respectively). There was not statistically significant differences in lipid profile in patients with negative anti-TPO antibodies before and after L-T4 treatment.

**Conclusion**

The effect of the thyroid substitution therapy on lipid parameters was more pronounced in patients with mild ScH and positive thyroid antibodies. Patients with mild ScH and positive anti-TPO antibodies may benefit of L-T4 treatment even in the lower TSH values.

**Key words:** subclinical hypothyroidism, thyroid peroxidase antibodies, levothyroxine therapy

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**P226****HDAC inhibition as a therapy approach in autoimmune thyroid disease**

Pablo Sacristán-Gómez<sup>1</sup>, Ana Serrano-Somavilla<sup>2</sup>, Miguel Sampedro-Nuñez<sup>3</sup>, Monica Marazuola<sup>3</sup> & Rebeca Martínez-Hernández<sup>2</sup>  
<sup>1</sup>IIS Princesa, Endocrinology, Madrid, Spain; <sup>2</sup> IIS Princesa, Universidad Autónoma de Madrid, Endocrinology, Madrid, Spain; <sup>3</sup> Hospital Universitario la Princesa, IIS Princesa, UAM, Endocrinology, Madrid, Spain

**Introduction**

Autoimmune Thyroid Diseases (AITD) are one of the most prevalent autoimmune diseases in industrialized countries (5% of population). The two main phenotypes of AITD, Hashimoto thyroiditis (HT) and Graves' disease (GD), are both characterized by the presence of circulating thyroid antibodies and infiltration by autoreactive lymphocytes in the thyroid gland and sometimes the orbit. One of the most studied mechanisms underlying AITD is the imbalance between immune activation and immune homeostasis of CD4+CD25- T cells or T effector cells (Teff) and CD4+CD25+FOXP3+ regulatory T cells (Treg). Histone deacetylases (HDACs) are enzymes that exert posttranslational modifications at protein level. HDAC9 interacts with FOXP3, the master regulator of Tregs, leading to an imbalance in Treg function. We have recently reported an increase expression of HDAC9 in Treg cells from AITD patients.

**Objective**

To investigate the in vitro effects of HDAC inhibitors (trichostatin A (Tsa) a pan-inhibitor, TMP-269 a class IIa inhibitor and the FDA approved pan-inhibitor, suberanilohydroxamic acid (SAHA/Vorinostat) on human freshly isolated CD4+CD25- T effector cells from AITD patients.

**Methods**

Toxicity assays were evaluated using LIVE/DEAD Viability-Cytotoxicity Kit on T cell proliferation by each inhibitor. Treg suppression assays were carried out in healthy controls and AITD patients. CD4+CD25+ Tregs were isolated from fresh PBMC using CD4+CD25+ Regulatory T Cell Isolation Kit (Miltenyi Biotec). To evaluate proliferation Teff cells were CFSE-labeled, and added to wells in serial dilutions giving Treg/Teff ratios of 0:1, 1:1, 1:2, 1:4 and 1:8 and in the presence or absence of differing concentrations of HDACi and using DMSO as control.

**Results**

Toxicity assays revealed us that TMP269 and SAHA demonstrate the same number and viability as control cells. On the contrary, Tsa decreased significantly the viability at the minimal concentration used, discarding this inhibitor from our assays. Suppression assays using the TMP269 inhibitor did not showed significantly effects on the proliferation of CD25- T cells. However, SAHA caused a mild to moderate impairment of CD25- division.

**Conclusions**

Among all the inhibitors assessed, SAHA did not exert a toxic effect in cells and had a significantly decrease on Teff proliferation compared to TMP269. Our study also showed that the impaired proliferation of CD4+CD25-Teff cells by SAHA, was not only by a specific Treg mediated effect, but also by the decrease in the CD4+CD25- cell division rate. These findings suggest that HDAC inhibition by SAHA may serve as a possible treatment of inflammation in AITD.

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**P227****Thyrotoxicosis-associated anemia at baseline and after methimazole treatment**

Laura Naglabeala<sup>1</sup>, Dan Alexandru Niculescu<sup>1,2</sup>, Anda Vladescu<sup>3</sup> & Catalina Poiana<sup>1,2</sup>

<sup>1</sup>C. I. Parhon National Institute of Endocrinology, Pituitary and Neuroendocrine Disorders, Bucharest, Romania; <sup>2</sup> Carol Davila University of Medicine and Pharmacy, Endocrinology, Bucharest, Romania; <sup>3</sup> C. I. Parhon National Institute of Endocrinology, Hematology, Bucharest, Romania

**Background**

Overt newly diagnosed hyperthyroidism is frequently associated with mild anemia. However, there are limited data on long term evolution under methimazole treatment. Our aim was to study the baseline characteristics and evolution of anemia in the hyperthyroidism setting.

**Methods**

We retrospectively assessed 58 consecutive patients [46 (79.3%) women] presenting with newly diagnosed overt thyrotoxicosis (43 Graves disease, 9 toxic nodular goiters, 4 toxic adenomas and 2 drug induced hyperthyroidism) in our practice. Of these, 30 were reassessed after 4-6 months of methimazole treatment. No patient had treatment for anemia. We measured thyroid-stimulating hormone, free thyroxine, hemoglobin (Hb), hematocrit, red blood cells, mean corpuscular volume, mean corpuscular hemoglobin, mean corpuscular hemoglobin concentration at both baseline and 4-6 months assessments. Anemia was defined by a Hb value  $< 12$  g/dl in women and  $< 14$  g/dl in men.

**Results**

At baseline, 19 patients (32.76%) had normochromic normocytic anemia, of whom 14 (73.63%) were women. Mean Hb was  $11.5 \pm 0.25$  g/dl and  $12.4 \pm 0.97$