

adequacy of thyroxine replacement is difficult, due to the loss of thyrotropin (TSH) as an accurate feedback marker. This study aim to explore the potential metabolic and clinical effects of different free T4 (fT4) replacement targets in patients with central hypothyroidism. **Method:** This was a single center, prospective open-label crossover-like trial of 51 patients (mean age 56±12.9 years, 27 male) with hypopituitarism with multiple hormonal deficiencies including central hypothyroidism after excluding those with primary thyroid diseases, high risk for cardiovascular diseases (CVD) and known CVD. Dosage of levothyroxine (L-T4) was titrated to a targeted lower, middle and upper fT4 tertile and maintained for 24 weeks before assessment. Anthropometric and physiological measurements, metabolic and peripheral tissue markers, cognitive and quality of life assessments (SF-36 and Hong Kong Montreal Cognitive Assessment-5 [HK-MoCA-5]) were compared before and after each fT4 tertile change. This was followed by another 24-week cycle of L-T4 dosage adjustment to achieve fT4 in another tertile, with the same assessment as above. **Results:** We demonstrated that raising fT4 target from lower to upper tertile within the normal reference range resulted in significant decrease in body mass index (27.1±6.0 vs 25.7±5.6 kg/m², P<0.01), waist circumference (89.5±12.7 vs 86.4±12.1 cm, p<0.01), diastolic blood pressure (79.1±12.9 vs 74.5±12.9 mmHg, p<0.05) and low density lipoprotein cholesterol (3.94±0.88 vs 2.90±0.71 mmol/L, p<0.01), apart from expected significant effect on tissue markers such as increased sex-hormone binding globulin (SHBG), increased ferritin and reduced creatinine kinase (CPK). The occurrence of metabolic syndrome (48.2% vs 29.0%, p <0.05) was significantly reduced with increasing fT4 from middle to upper tertile, without significant effect on glycemic indexes, heart rate, SF-36 and HK-MoCA-5. **Conclusion:** In this study, we demonstrated that raising fT4 target to the upper tertile of normal resulted in a favourable improvement in various metabolic indexes without a significant increase in adverse effects over a period of 48 weeks.

Thyroid

FROM HYPO- TO HYPERTHYROIDISM

Goiter at Diagnosis Might Be Predicting Factor for Early Onset Intractable Graves' Disease

Sungeun Kim, MD¹, Goong Ho Nam, MD², Nayeong Lee, MD¹, Seulki Kim, MD³, Moon Bae Ahn, MD, PhD⁴, Shin-Hee Kim, MD, PhD⁵, cho won-kyoung, MD, PhD², Kyoung Soon Cho, MD, PhD⁶, Min-Ho Jung, MD, PhD⁷, Byung-Kyu Suh, MD, PhD⁸.

¹Seoul St. Mary's hospital, Seoul, Korea, Republic of, ²Suwon St. Vincent's hospital, Suwon, Korea, Republic of, ³Eunpyeong St. Mary's hospital, Seoul, Korea, Republic of, ⁴Seoul St. Mary's Hospital, Seoul, Korea, Republic of, ⁵Incheon St. Mary's hospital, Incheon, Korea, Republic of, ⁶Bucheon St. Mary's hospital, Bucheon, Korea, Republic of, ⁷Yeouido St. Mary's hospital, Seoul, Korea, Republic of, ⁸Seoul St Mary's Hospital, Seoul, Korea, Republic of.

Introduction: The clinical course of Graves' disease (GD) treated with anti-thyroid drug (ATD) treatment were reviewed with the aim of establishing criteria able to predict intractable GD. **Methods:** The clinical course of 116 patients

with GD who agreed to participate in this study between March 2009 and August 2019 in the pediatric endocrine clinic at Seoul St. Mary's and St. Vincent's Hospitals were reviewed. We defined an intractable as hyperthyroidism persistent over 2 years of ATD or relapsed after ATD withdrawal or had been treated ATD for at least 5 years [1-3]. **Result:** Of 116 patients diagnosed with GD, 37 patients (31.8%) had remission and 79 (68.2%) had intractable GD. Between intractable and remission GD group, there were no significant difference of female percentage, age at diagnosis, thyroid associated ophthalmopathy, serum levels of triiodothyronine (T3), free tetraiodothyronine (T4), Thyroid stimulating hormone (TSH) and positive rate of thyroid autoantibody (Thyroid peroxidase (TPO), Thyroglobulin (Tg), Thyroid stimulating hormone receptor (TSHR)). In intractable GD patients, the frequency of goiter at diagnosis is higher than remission group (89.9% [71/79] and 70.3% [26/37], P-value = 0.014). In correlation analysis, intractable GD showed positive correlation with goiter (R=0.247, P-value = 0.008). In multivariate logistic analyses, goiter is showed strong relationship with intractable GD (odds ratio, 3.793; 95% confidence interval, 1.367-10.524) after adjusting age and sex. **Conclusion:** Our study supported that goiter at initial presentation might be predicting factor for early onset intractable GD.

Thyroid

FROM HYPO- TO HYPERTHYROIDISM

High Prevalence of Anti Thyroid Antibodies in an Albanian Cohort of Patients

Dorina Minxuri, MD.MSc¹, Anila Mitre, Prof. As², Silva Bino, Prof. As³, Ina Toska, MSc², Ina Mulla, MSc².

¹Catholic University Our Lady of Good Council, Tirana, Albania, ²Intermedica Center, Tirana, Albania, ³Institute of Public Health, Tirana, Albania.

Introduction: Albania is classified as iodine deficient region and endemic goiter in this country has been a concern for public health. A salt iodization program has been implemented in Albania since 2008. Most of regions still remain with a mild or moderate iodine deficiency there are no studies on prevalence of thyroid autoimmune disorders. The purpose of this study was to assess thyroid function and the presence of thyroid antibodies in subjects that were not previously diagnosed or treated for thyroid disorders. **Methods:** This is a cross-sectional study performed in a cohort of patients in Albania during a 2 year period (January 2018-January 2020). We assessed the prevalence of thyroid function disorders and presence of thyroid antibodies in 5047 subjects (81% females and 19% males). Individuals previously diagnosed or treated for thyroid disease were excluded from the study. TSH, Free T4, total T3, Anti TPO(thyroid peroxidase) and anti TG (thyroglobulin) were measured with electrochemiluminescence method with Cobas 6000 Roche Diagnostics. We calculated the frequency of thyroid antibodies and the abnormal thyroid function. Statistical analysis was performed to see if there was a difference between individuals with positive antibodies and those negative for antibodies. **Results:** 91 % (4596) of subjects resulted euthyroid. We found a low prevalence of overt thyroid dysfunction (hyperthyroidism 0.48%