current CT of the neck demonstrated marked thyroid goiter with mild tracheal narrowing and mild tonsillitis. She was discharged on propylthiouracil 100 mg TID, metoprolol 25 mg TID, and augmentin 875 mg BID with the goal of decreasing her free T4 and T3 in preparation for thyroidectomy. Four days later, the patient returned to the ED with similar symptoms. Labs revealed TSH 0.001, free T4 3.70, FreeT3 15.1 WBC 3.1, platelets 103, and elevated total bilirubin, transaminases, and alkaline phosphatase. EKG demonstrated sinus tachycardia with minimal diffuse ST depression. Ultrasound showed a 0.34 cm round hypoechoic focus in the endometrial cavity without a fetal pole or cardiac activity. Chest X-ray demonstrated minor bibasilar atelectasis. The patient was admitted and PTU was discontinued due to leukopenia and elevated transaminases. Dexamethasone was started and metoprolol was continued. Total thyroidectomy was planned for when free T4 less 2.0 The patient received two treatments of plasmapheresis, which decreased free T4 to 2.11 and then to 1.40. The thrombocytopenia and transaminitis resolved

A total thyroidectomy was performed and well tolerated. patient had full term pregnancy, uneventful delivery while on thyroid hormone replacement.

Conclusion: Preoperative plasmapheresis can be considered for the normalization of free T4 if thionamides fail or cannot be tolerated. This case demonstrates the successful management of thyrotoxicosis with plasmapheresis in the first trimester of pregnancy.to Our knowledge Plasmapheresis was not used before in Pregnancy in preparation for thyroidectomy.

Thyroid

BENIGN THYROID DISEASE AND HEALTH DISPARITIES IN THYROID I

Systemic Safety Analysis of Mycophenolate in Graves' Orbitopathy

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SAT-429

Context

The dual antiproliferative mechanism of mycophenolate appears to be beneficial in Graves' orbitopathy (GO).

Methods

The safety data, which is of utmost importance in immunomodulation, from the two major randomized mycophenolate trials ["Chinese trial" (1) and "European Group on Graves' Orbitopathy (EUGOGO) trial" (2)] and the original database of the EUGOGO trial were systematically analyzed. Treatment efficacy stratified by individual visual parameters of clinical disease activity and severity were also compared.

Results

A total of 129 adverse events (AE) involving 50 patients (29.4%) were noted among all mycophenolate-treated patients. Mycophenolate sodium plus intravenous glucocorticoid (MPS+GC) group of the EUGOGO trial recorded significantly more AE (55.4% versus 4.6% of patients affected) and serious adverse events (SAE) (12.5% versus 0%) than mycophenolate mofetil (MMF) group of the Chinese trial. The excess of AE may partly be contributed by GC use. None of those SAE was side effect (SE). Most SE in MPS+GC group (79%) were mild. Gastrointestinal disorders, infection and liver dysfunction affected 8.8%, 7.1% and 1.2% of all mycophenolate-treated patients (versus 5.4%, 5.4% and 1.2% of all patients on GC monotherapy, respectively). When compared to GC monotherapy, MPS+GC did not significantly increase the overall SE rate (25.3% versus 19.7%) nor did risks of infection or liver dysfunction, but it result in more mild gastrointestinal disorders (SE rate in EUGOGO trial 10.8% versus 4.9%). No cytopenia, serious infection, severe hepatotoxicity or treatment related mortality was reported among mycophenolate-treated patients. The much higher AE rates of mycophenolate trials in other autoimmune diseases or transplantations suggested that major mycophenolate toxicities were mostly dose- and duration-dependent. Regarding efficacy, mycophenolate achieved better overall response than GC monotherapy. Approximately 70% (versus 90% in MMF group) and 30% (versus 60–70% in MMF group) of patients in MPS+GC group achieved endpoints in most individual visual parameters of activity and severity, respectively. MPS+GC group of the EUGOGO trial performed better than MMF group in terms of improvement of pain and eye movement.

Conclusions

The risk-benefit ratio of 6-month courses of low dose mycophenolate treatment in active moderate-to-severe GO, either as monotherapy or as combination with GC, is highly favorable given its reassuring safety profile with low rate of mild to moderate SE and promising efficacy.

References:

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Thyroid

THYROID AUTOIMMUNITY AND BENIGN THYROID DISEASE

Functional TSH Receptor Antibodies Are a Biomarker for Graves' Disease - a Prospective Trial

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OR18-03

Objective

We aimed to evaluate the clinical utility and predictive value of stimulatory (TSAb) and blocking (TBAb) TSH receptor antibodies in the management of Graves' disease (GD).

Methods

Hundred well-defined, consecutive, unselected, untreated hyperthyroid patients with GD were enrolled in a prospective two-year trial. Methimazole (MMI) was administered for 24 weeks according to baseline serum concentrations of free T3/free T4. Starting dose was 5–30 mg/day. Through a titration regimen, this dose was respectively tapered or increased at each subsequent study visit as the patient became euthyroid or remained hyperthyroid. Goals of therapy were to maintain normal fT4 and TSH levels. MMI therapy

was stopped at week 24. The main outcome measure was clinical response versus non-response to a 24-week MMI treatment defined as biochemical euthyroidism versus persistent hyperthyroidism at week 24 and/or relapse at weeks 36, 48, and 96. TSAb was reported as percentage of specimen-to-reference ratio (cut-off SRR% <140). Blocking activity was defined as percent inhibition of luciferase expression relative to induction with bovine TSH alone (cut-off >40% inhibition).
Results
Forty-four patients responded to MMI of whom 43% had Graves' orbitopathy (GO) while 56 were non-responders (66% with GO, p<0.01). At baseline, undiluted serum TSAb but not thyroid binding inhibiting immunoglobulins (TBII) differentiated between thyroidal GD only versus GD+GO (p<0.001). Further, at baseline responders demonstrated marked differences in diluted TSAb titers compared with non-responders (p<0.001). All patients with a TSAb dilution titer above three did not respond to MMI treatment. In contrast, TBII dilution titers did not differentiate between responders and non-responders to MMI and serum samples became TBII negative already at low dilutions. During treatment, serum TSAb levels decreased markedly in responders (p<0.001) but increased in non-responders (p<0.01). In contrast, TBII strongly decreased in non-responders (p=0.002). All non-responders at week 24 and/or those who relapsed during the 72-week follow-up were TSAb positive at week 24. A shift from TSAb to TBAb was noted in eight patients during treatment and/or follow-up and led to remission.
Conclusions
Serum TSAb levels are a biomarker for and mirror severity of GD. Their increase during MMI treatment is a marker for on-going disease activity. TSAb dilution analysis had additional predictive value.

Adrenal

ADRENAL - HYPERTENSION

Cosyntropin Stimulation on Adrenal Venous Sampling Obscure Surgically Curable Primary Aldosteronism

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MON-198

Context: While it has been shown that ACTH stimulation during adrenal venous sampling (AVS) for primary aldosteronism (PA) leads to correct lateralization, others showed opposite results. Whether to use ACTH stimulation during AVS for the subtype diagnosis of PA remains unsolved. **Objectives:** Our purpose of this study is to evaluate the clinical implications of ACTH stimulation during AVS in terms of surgical outcomes. **Design and settings:** Among JRAS cohort, we allocated 314 patients with both basal and ACTH-stimulated AVS data who underwent adrenalectomy to 3 groups: basal lateralization index (LI)≥2 with ACTH-stimulated LI ≥4 on the ipsilateral side (Unilateral (U) to U group, n=245); basal LI <2 with ACTH-stimulated LI ≥4 (n=15); basal LI≥2 with ACTH-stimulated LI <4 (U to Bilateral (B) group, n=54). We compared surgical outcomes among the groups. **Results:** Compared with the U to U group, the U to B group had poor clinical and biochemical outcomes and low rates of adrenal adenoma as a pathological finding. All patients in the U to Bgroup with clinical and biochemical benefits however had adrenal adenoma as a pathological finding and could be well differentiated from those with poor surgical outcome via basal LI, but not ACTH-stimulated LI. A receiver operating characteristic curve analysis demonstrated that the cut-off value of 8.3 showed the specificity of 84% for the prediction of good surgical outcome in U to B group.These results were similar even when we defined each group based on a cut-off value of 4 for basal LI. Although, the basal plasma aldosterone concentration (PAC) in the adrenal veins on both dominant and non-dominant sides among patients with better surgical outcome in the U to B group were not significantly different from those in the U to U group, there was a significant difference in the ACTH-stimulated PAC on the dominant side. **Conclusions:** We demonstrated novel findings showing that patients in the U to B group were shown to be comprised of 2 groups with good and poor surgical outcomes, and basal LI was useful in identifying PA patients with good surgical outcome in U to B group. The low expression level of MC2R receptor on aldosterone-producing adenoma (APA) might be the explanation of the weak response in aldosterone level in a proportion of surgically curable APA cases. These findings point to the important fact that ACTH stimulation on AVS obscure surgically curable cases of PA.

Neuroendocrinology and Pituitary

HYPOTHALAMIC-PITUITARY DEVELOPMENT AND FUNCTION

Metabolic Effects Of Hypothalamic Pomc Neurons Generated Postnatally From Tanycytes On A Pomc Null Genetic Background

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OR16-03

Hypothalamic proopiomelanocortin (POMC) neurons are an integral part of the central melanocortin system and regulate feeding and energy balance in vertebrates. Tanycytes are radial glial-like cells lining the third ventricle that contain a subpopulation of adult stem cells, which can differentiate under specific circumstances into glia and neurons, including POMC neurons. However, the