Biochemical parameters were significant for normal white blood cell counts, elevated erythrocyte sedimentation rate (112, 105, 145 mm/hr respectively; n 0–15 mm/hr) and C-reactive protein (CRP) (54.3, 260, 162 mg/L respectively; n 0–5.0 mg/L) and elevated creatine kinase in two cases (539 and 379 U/L; n 5–150 U/L). Infectious work-up including blood cultures were negative. Lower extremity doppler was negative in all three cases. Diagnosis was established with the help of MRI in two cases showing diffuse hyperintensities of the muscle groups involved and muscle biopsy in the third showing neutrophilic and eosinophilic inflammation and areas of necrosis, fibrosis and hemorrhage. Treatment involved adequate pain management and anti-platelet therapy along with tight glycemic control. No recurrence thus far was noticed in all three patients.

Conclusion: DMI should be considered in the differential diagnosis of patients with the aforementioned risk factors who did not show a response to antibiotics, as administered for presumed cellulitis. Though self-limiting, studies have shown a long term temporal correlation with increased all-cause mortality in patients with DMI. Hence DMI is considered as another cardiovascular risk equivalent. Further studies are needed to explore strategies aimed at preventing DMI and its recurrence.

Pediatric Endocrinology

PEDIATRIC OBESITY, THYROID, AND CANCER

Costa Rican National Primary Congenital Hypothyroidism Screening Program Evaluation. Retrospective Cohort Trial Between 2015 and 2017.

Alejandro Cob, MD1, Fred Cavallo Aita, MD2, Agnes Rodriguez, BA3. 1Hospital Nacional de Niños, San José, Costa Rica, 2Hospital Nacional de Ninos, San José, Costa Rica, 3Asociación Costarricense para el Tamizaje y la Prevención de Discapacidades en el Niño, San José, Costa Rica.

MON-101

Congenital hypothyroidism (CH) is one of the leading causes of intellectual impairment worldwide in infancy. The newborn screening has been able to prevent this mental disability, by a prompt initiation of therapy. Over the last years the incidence of HC has been increasing, mainly by lowering the screening cut-off level that leads to detection of milder cases. There is conflicting evidence if children with mild CH without treatment may develop neurological impairment in the future.

Costa Rican newborn screening program in divided in three stages, measuring serum TSH concentrations from a heel prick aliquot of capillary blood dried onto a filter paper. Each test has different TSH cut-off values to determine if the newborn needs a clinical evaluation by an endocrinologist, needs another screening test or rules out hypothyroidism.

We developed an observational, descriptive, retrospective study, based on medical records, to evaluate our newborn screening program performance. The study included the total national population of screened newborns from 2015 to 2017. Descriptive analysis and analytical analysis of variables were done, and test’s sensitivity and specificity were determined.

The study analyzed 204,241 screened newborns, and 145 children referred to the Endocrinology Department of the National Children Hospital. This population represents 97% of births in these 3 years. The recall rate for a first positive test was 0.3%. Congenital hypothyroidism was confirmed in 73% of children referred to the Endocrinology Department because of a positive screening. Incidence was 1/1926 births. Detection rate was independent of birth weight nor gestational age. 45.3% of children diagnosed with CH were detected after the first screening test, 52.8% after the second screening test and 1.9% after the third screening test. Screening test analysis showed high sensitivity and specificity, with diagnostic accuracy above 90%, except for the third screening test. Free thyroxine measurements alone weren’t useful to predict CH diagnosis. The coverage of the national neonatal screening program extends almost to the entire population. Our test specificity is within international standards. Incidence of CH in Costa Rica is similar to that reported in medical literature. With current detection cut-off level, there is no need of performing a second mandatory evaluation to preterm and low weight newborns. The third screening test has a low performance rate, does not improve detection of children with CH significantly, and delays clinical evaluation by the endocrinologist. Prognosis of treated children with CH is excellent, with no evidence of severe cognitive deficit.

Thyroid

THYROID DISORDERS CASE REPORTS I

Plasmapheresis Treatment of Thyrotoxicosis in Pregnancy for Preparation of Thyroidectomy

Mohamad Hosam Horani, MD1, Ryan M Brooks, OMS-IV2. Bianca Vazques, MD3, Robert Arashahi, MD4, Mustapha Khan, MD4. 1Alsham Endocrinology, Gilbert, AZ, USA, 2T.A. Still University, Gilbert, AZ, USA, 3AZ Thyroid Surgery, Scottsdale, AZ, USA, 4CRMC, Chandler, AZ, USA.

SUN-509

Introduction: Thyrotoxicosis in pregnancy presents the challenge of maintaining a normal level of maternal free thyroid hormone, while minimizing adverse drug effects, obstetric complications, and the risk fetal hypothyroidism. Propylthiouracil is used for treatment in the first trimester with thyroidectomy typically performed in the second trimester if PTU/ MTZ are intolerable or if thyrotoxicosis persists. When thyroidectomy is indicated, thyroid hormone levels must be normalized prior to the operation, as there is risk of thyroid storm that can occur during and up to several hours postoperatively. In such cases, preoperative plasmapheresis may be considered.

Case Presentation: We present a 24 year old G2P0101 Hispanic female who reported to the ED with throat pain, chills, tachycardia, and shortness of breath who was found to have a TSH less than 0.005, free T4 3.15, elevated alkaline phosphatase, and an incidentally discovered early pregnancy approximately 4 - 6 weeks gestation. Medical history includes hyperthyroidism with obstetric complications, and the risk fetal hypothyroidism. Plasmapheresis has been used to successfully treat thyrotoxicosis in pregnancy, with successful pregnancy outcomes.
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 thyroidec- tomy. 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 dis- continued 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. 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**

Alan CH Lee, MBBS, Tanja Diana, PhD, Lara Frommer, MSc.,
George Jean Kahaly, MD,PHD.
Johannes Gutenberg University Medical Center, Mainz,
Germany.

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 mor- tality 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:

(1) Ye et al., Clin Endocrinol (Oxf). 2017;86(2):247–55
(2) Kahaly et al. Lancet D&E. 2018;6(4):287–98

**Thyroid**

**THYROID AUTOIMMUNITY AND BENIGN THYROID DISEASE**

**functional TSH Receptor Antibodies Are a Biomarker for Graves’ Disease - a Prospective Trial**

George Jean Kahaly, MD,PHD1, Tanja Diana, PhD1,
Michael Kanitz, Lab technician1, Paul D. Olivo, MD PhD2,
1Johannes Gutenberg University Medical Center, Mainz,
Germany; 2Washington University Medical School, St. Louis, St.
Louis, MO, USA.

**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 prospect- ive 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 be- came euthyroid or remained hyperthyroid. Goals of therapy were to maintain normal fT4 and TSH levels. MMI therapy