

Her home doses of calcitriol and calcium were resumed. She was referred for total thyroidectomy as an outpatient once she became euthyroid. The confirmatory Western blot test for HIV was negative. It was determined that presence of thyroid stimulating immunoglobulin resulted in the false positive ELISA test.

Discussion: Hyperthyroidism with Graves disease seen in PHP has only very rarely been reported. (1) It has been postulated that abnormal electrolytes and elevated parathyroid hormone from PHP may lead to stimulation of the thyroid gland and perpetuate Graves disease symptoms. (2) Furthermore, the presentation of thyrotoxicosis despite TSH resistance in PHP indicates that there may be other mechanisms for TSH receptor antibodies to take effect in these patients which have not yet been determined. (3) Lastly, autoimmune diseases, including Graves disease, can cause a false-positive HIV ELISA as seen in our patient.

Conclusion: Although rare, thyrotoxicosis may present in patients with PHP1B. Additionally, it should be kept in mind that autoimmune diseases such as Graves disease can cause a false positive HIV ELISA, and follow-up Western blot testing should therefore be performed.

References:

- (1) Gerhardt A, Hackenberg K. 2002. Pseudohypoparathyroidism and Graves' disease: a rare combination of two endocrinological diseases. *Exp Clin Endocrinol Diabetes*. 110:245-247
- (2) Morón-Díaz et al. 2019. A rare case of Graves' disease in a patient with type 1B pseudohypoparathyroidism and associated TSH resistance. *Endocrine Abstracts*. 63:96
- (3) Richard Prokesch. 2010. Navigating False Positive Testing. *HIV Specialist (AAHIVS)*. 2:27

Cardiovascular Endocrinology

PATHOPHYSIOLOGY OF CARDIOMETABOLIC DISEASE

Metabolic Effects of Cross-Hormone Treatments in Transgender Individuals in Taiwan

Liang-Yu Lin, MD PhD, Yu-Hsien Liu, MD, Tsung-Hui Wu, MD, Yi-Chun Lin, MD.

Taipei Veterans General Hospital, Taipei, Taiwan.

SUN-566

Objective:

Many biological differences seen in men and women are driven by relative different level of estrogen and testosterone. Transgender individuals may need gender-affirming intervention like inhibiting of endogenous sex hormones or replenishing cross-hormone to induce physical change to stimulate their expressed or experienced gender. However, recent study has concluded that the incidences of acute cardiovascular events are higher in transwomen receiving transgender hormone therapy (1). Transgender therapy for adults with Testosterone in female to male (FtM); with Estrogen and anti-androgen in male to female (MtF) are frequently prescribed in Taiwan. The aim of this study is to investigate metabolic effects of an altered sex hormone profile on different gender.

Methods:

The study is a retrospective study conducted in a tertiary medical center in Northern Taiwan analyzing biological differences over time for 65 FtM and 45 MtF patients in

our endocrine out-patient department. The results from the exams are analyzed separately using paired t-test compared to baseline visit. The transgender individuals are examined at four time points; before the cross-hormone therapy, three, six, and twelve months following sex hormone treatment.

Results:

The primary outcome was that FtM patients showed significant increases in BMI (22.6 ± 0.3 v.s. 23.3 ± 0.4 kg/m²; $P < 0.001$; $t = 6M$), low density lipoprotein cholesterol (124 ± 3 vs. 131 ± 3 mg/dL; $P = 0.03$; $t = 12M$), creatinine (0.75 ± 0.01 vs. 0.83 ± 0.14 mg/dL; $P < 0.001$; $t = 12M$), and hemoglobin (13.5 ± 0.7 v.s. 15.2 ± 0.19 g/dL; $P < 0.001$; $t = 12M$) compared to the baseline; decreases of high density lipoprotein cholesterol (57 ± 2.1 v.s. 51 ± 2.0 mg/dL; < 0.001 ; $t = 12M$) was also revealed. Patients in MtF group disclosed declines in low density lipoprotein cholesterol (104 ± 3 v.s. 100 ± 3 mg/dL; $P = 0.05$; $t = 3M$), hemoglobin (14.0 ± 0.1 v.s. 13.5 ± 0.1 g/dL; $P = 0.008$; $t = 12M$), uric acid (5.3 ± 0.2 v.s. 4.7 ± 0.2 mg/dL; $P = 0.03$; $t = 12M$) and creatinine (0.82 ± 0.01 v.s. 0.79 ± 0.14 mg/dL; $P < 0.001$; $t = 6M$) compared to baseline data. In addition, most of these metabolic effects persisted the follow-up period.

Conclusion:

This observational study revealed the role of cross-hormone treatment in increasing relative cardiovascular risk in FtM transgender individuals.

Reference:

1. Nota, N. M., et al. (2019). "Occurrence of Acute Cardiovascular Events in Transgender Individuals Receiving Hormone Therapy: Results From a Large Cohort Study." *Circulation* 139(11): 1461-1462.

Nothing to Disclose: LYL, YHL, THW, YCL

Adipose Tissue, Appetite, and Obesity

RARE CAUSES AND CONDITIONS OF OBESITY: PRADER WILLI SYNDROME, LIPODYSTROPHY

U.S. Prevalence & Mortality of Prader-Willi Syndrome: A Population-Based Study of Medical Claims

Shawn E. McCandless, MD¹, Marissa Suh, MPH², David Yin, BS², Michael Yeh, MD, MPH³, Shawn Czado, BS³, Sina Aghsaei, MSc², Justin W. Li, BA², Kevin Francis, BS², Nandini Hadker, MA², Diane E J Stafford, MD⁴.

¹University of Colorado, Denver, CO, USA, ²Trinity Partners, Waltham, MA, USA, ³Millendo Therapeutics, Ann Arbor, MI, USA, ⁴Stanford University/Lucile Packard Children's Hospital, Stanford, CA, USA.

SUN-604

Prader-Willi syndrome (PWS) is a complex developmental genetic disorder associated with hypotonia, poor feeding in neonates, onset of hyperphagia in early childhood, and shorter overall life expectancy. Prior epidemiology studies of PWS have examined smaller populations, with limited research in a US population. The aim of this study was to provide a contemporary estimate of PWS prevalence and annual all-cause mortality in the US using a large administrative medical claims dataset.

Methods: PWS patients were identified between 2012-2014 via the presence of ≥ 2 claims with a diagnosis code for

PWS on medical claims provided by IQVIA™ Health Plan Claims Data and CMS Medicare fee-for-service claims. Patients were grouped into age bands including: 0-2, 3-8, 9-17, 18-26, 27-49, and ≥50. PWS prevalence and mortality rates were calculated for 2014, then 2018 US census data was used to project rates for the total US population. The presence of select diagnoses and procedures suggestive of a life-threatening event (e.g., mechanical ventilation) with a patient's prompt disenrollment defined as death in the IQVIA data; vital status is indicated in Medicare data.

Results: Overall US diagnosed PWS prevalence was 2.7 per 100k persons (or 1 per 37,037), a prevalence of 8,870 patients in the US in 2018. Diagnosed PWS prevalence 3.9, 5.2, 4.5, 4.2, 2.5, and 1.1 per 100k persons respectively for age bands 0-2, 3-8, 9-17, 18-26, 27-49, and ≥50. The median age of PWS patients was 21 years. The mortality rate was highest among diagnosed PWS patients aged 0-2 years and lowest among those aged 9-17 years and the overall mortality rate was 2.7%. For all respective age bands 0-2, 3-8, 9-17, 18-26, 27-49, and ≥50, the all-cause mortality rate was 5.4%, 3.0%, 1.4%, 2.1%, 2.4%, and 4.5%. The observed median age of death was 23 years (IQR 6-36)

Conclusions: The diagnosed PWS prevalence of 1 per 37,037 persons estimated for the 2018 US population is comparable to the other reported US prevalence estimate. As the current study describes diagnosed patients, it likely represents a lower bound of true PWS prevalence. Annual PWS mortality is ≥3 times higher than the overall US population (2.7% vs 0.8%). This rate appears unchanged from mortality estimates reported for PWS populations in the last several decades despite significant advances in genetic testing and the availability of growth hormone therapies in the US. Aggressive management of serious comorbid conditions, especially in younger PWS patients, should be a clinical priority.

Neuroendocrinology and Pituitary PITUITARY TUMORS II

Impact of Tumor Characteristics and Preoperative IGF-1 Levels on Postoperative Hormonal Remission Following Endoscopic Transsphenoidal Surgery in Patients with Acromegaly: A Single-Surgeon Series

Tyler Cardinal, BS, Martin Rutkowski, MD, Tanu Patel, BA, Mark Shiroishi, MD, John David Carmichael, MD, Gabriel Zada, MD.

KECK SCHOOL OF MEDICINE OF USC, Los Angeles, CA, USA.

MON-319

Introduction:

Acromegaly is a potentially fatal neuro-endocrinopathy caused by a growth hormone (GH)-secreting pituitary adenoma (PA). A lack of consensus on factors that reliably predict patient outcomes in acromegalic patients following endoscopic endonasal approaches (EEA) warrants additional investigation.

Methods:

Pre- and postoperative tumor and endocrinological characteristics from 55 acromegalic patients who underwent EEA for resection of a GH-secreting PA were evaluated as potential predictors of postoperative hormonal remission (defined as age- and sex- normalized IGF-1 levels).

Results:

The 55 patients included had a mean age of 50.1 ± 13.5 years and a mean follow-up time of 18 ± 17.4 months. Fifty-three patients (96%) presented with dysmorphic craniofacial features, with 22 (40%) presenting with prognathism, 22 (40%) exhibiting frontal bossing, and 18 (33%) presenting with macroglossia. Ten (18%) had microadenomas and 45 (82%) had macroadenomas. Five (9.4%) had giant adenomas. Forty-five (92%) tumors were invasive, with 44 (83%) exhibiting infrasellar invasion, 17 (32%) extending above the sella, and 9 (18%) with cavernous sinus invasion. Thirty-three patients (66%) underwent gross total resection (GTR; mean maximal tumor diameter = 1.52 cm), and 17 (34%) underwent subtotal resection (STR; mean maximal tumor diameter = 2.77 cm). Invasive tumors were significantly larger and Knosp scores were negatively correlated with GTR. Thirty-three patients (65%) achieved hormonal remission after EEA resection alone, which increased to 80% with adjunctive medical therapy. Additionally, 90% of patients who underwent GTR and 63% of patients who underwent STR demonstrated postoperative remission. Six patients (11%) exhibited biochemical remission after postoperative medical therapy with an average time to remission of 5.2 months. These patients all had significantly higher preoperative IGF-1 levels and larger tumors than patients who remitted immediately postoperatively. In all patients preoperative IGF-1 levels were inversely correlated with hormonal remission.

Conclusions:

This study indicates that endoscopic transsphenoidal resection of growth hormone secreting pituitary adenomas is a safe and highly effective management strategy for achieving hormonal remission and tumor control for patients with acromegaly. When combined with postoperative medical therapy, we observed endocrinological remission rates of 80% based on normalized IGF-1 levels. Our results support the conclusions of current literature that smaller and less invasive tumors are more likely to be fully resected. We additionally suggest that patients with lower preoperative IGF-1 are more likely to undergo postoperative biochemical remission, irrespective of tumor size and invasion.

Diabetes Mellitus and Glucose Metabolism

IMPACTS OF METABOLISM ON CLINICAL CHALLENGES

Fecal Microbiota Transplantation Trial for the Improvement of Metabolism (FMT-TRIM): A Randomized Double-Blind Placebo-Controlled Pilot Trial

Elaine Wei-Yin Yu, MD, MMSc¹, Gao Liu, MD, PhD¹, Petr Stastka, BS¹, Michael Chadwick Cheney, NP¹, Jasmin Mahabamunuge, BA¹, Mariam Torres Soto, BA, MA¹, Christopher B. Ford, PhD², Jessica A. Bryant, PhD², Matthew R. Henn, PhD², Elizabeth L. Hohmann, MD¹.

¹Massachusetts General Hospital, Boston, MA, USA, ²Seres Therapeutics, Inc., Cambridge, MA, USA.

OR26-06

Background: There is intense interest about the therapeutic potential of altering gut microbiota to improve