SUN-161

Background: Primary aldosteronism (PA) is more common than expected. Aberrant adrenal expression of LH receptor in patients with PA has been reported, however, its physiological role on the development of PA is still unknown. Herein, we report two unique cases of PA in patients with untreated Klinefelter's syndrome, characterized as increased serum LH, suggesting a possible contribution of the syndrome to PA development. **Clinical Cases:** Case 1 was a 39-year-old man with obesity and hypertension since his 20s. His plasma aldosterone concentration (PAC) and renin activity (PRA) were 220 pg/mL and 0.4 ng/mL/h, respectively. He was diagnosed as having bilateral PA by confirmatory tests and adrenal venous sampling (AVS). Klinefelter's syndrome was suspected as he showed gynecomastia and small testes, and it was confirmed on the basis of a low serum total testosterone level (57.3 ng/dL), high serum LH level (50.9 mIU/mL), and chromosome analysis. Case 2 was a 28-year-old man who had untreated Klinefelter's syndrome diagnosed in his childhood and a two-year history of hypertension and hypokalemia. PAC and PRA were 247 pg/mL and 0.3 ng/mL/h, respectively. He was diagnosed as having a 10 mm-sized aldosterone-producing adenoma (APA) by AVS. In the APA, immunohistochemical analysis showed co-expression of LH receptor and CYP11B2. **Conclusion:** Our cases of untreated Klinefelter's syndrome complicated with PA suggest that increased serum LH levels and adipose tissues, caused by primary hypogonadism, could contribute to PA development. The possible complication of PA in hypertensive patients with Klinefelter's syndrome should be carefully considered.

Thyroid

THYROID DISORDERS CASE REPORTS II

The Weary Beating Heart: Complications of Severe Hypothyroidism in a Mentally Ill Patient.

Nikita Limara Rabelo Pagan, MD, Melanie Quintana Serrano, MD, Mary J. Rodriguez Malave, MD, MPH, Meilyn Reyes, MD.
University of Puerto Rico Medical Sciences, San Juan, PR, USA.

SAT-489

Myxedema coma is a severe form of hypothyroidism representing a endocrinologic emergency. It requires prompt identification and management, as mortality rates exceed 50%. Its rarity stems from early recognition and thyroid medication availability. Its presentation can be non-specific, making it a challenging diagnosis.

This is a 67-year-old male inmate who was brought to the ED due to hypoactivity. He had a long-standing history of bipolar disorder, and hypothyroidism receiving oral levothyroxine.

On evaluation, patient had slowed mentation, GCS 14/15, sluggish reactive pupils, macroglossia, diffuse non-pitting edema, and delayed relaxation of the deep tendon reflexes in the extremities. Vital signs were abnormal; T: 35.2 °C, RR: 10 rpm, SpO2: 84 %, BP: 137/89 mmHg and HR: 42 bpm without chronotropism. 12-lead ECG revealed a complete atrioventricular block (AV block), with non-conductive P waves and idioventricular rhythm. Patient became hemodynamically unstable, transcutaneous pacemaker was placed. Dopamine infusion was initiated for adequate mean arterial pressure. Subsequently, a femoral transvenous pacemaker was performed. However, neurological deterioration prompted mechanical ventilation.

Exploring reversible AV block etiologies, laboratory results were markedly elevated for TSH at 184.775 ng/mL and decreased T4 at 1.5 ng/mL. Lithium levels were therapeutic. Myxedema coma was identified and timely treatment was provided with intravenous thyroid hormone replacement, intravenous hydrocortisone, and supportive care. Patient was transferred to an ICU where TSH was monitored. After 5 days of receiving IV thyroid hormone replacement therapy, TSH improved. However, patient remained dependent on transvenous pacemaker, for which permanent pacemaker had to be placed. With further therapy, patient's neurological status improved leading to extubation, and subsequent discharge.

Thyroid hormones play a vital role in the electrical current of the heart; hence, disturbances may potentiate cardiac arrhythmias. Sinus bradycardia and QT interval prolongation are commonly seen. As the severity of hypothyroidism progresses, high-grade AV block may be encountered, being third degree AV block the most challenging and severe.

Patients with high-degree AV block in the setting of reversible etiologies, commonly, do not need a permanent pacemaker. On the contrary, our patient developed complete dependence of the pacemaker for adequate cardiac synchrony, despite adequate replacement therapy.

With this case, we illustrate the importance of a thorough evaluation in patients with AV block of unknown origin, with special attention to reversible etiologies. Thyroid function abnormalities should be promptly identified and managed for better outcomes. Furthermore, it may decrease cardiac death risk and the need for invasive procedures, such as permanent pacemaker placement.

Bone and Mineral Metabolism

BONE AND MINERAL CASE REPORTS II

Hollow Bones: A Case Report of Immobilization Osteoporosis in a Young Female

Salman Zahoor Bhat, MBBS, MD[1], Itivrita Goyal, MD[2], Ajay Chaudhuri, MBBS, MRCP[3].
[1]University at Buffalo / Jacobs School Of Medicine, Buffalo, NY, USA, [2]University at Buffalo, Buffalo, NY, USA, [3]UB Sch of Med, Williamsville, NY, USA.

MON-359

Abstract

Introduction:

Osteoporosis is defined as decreased bone strength due to reduced bone mineral density (BMD) and/or abnormal bone architecture leading to bone fragility and increased risk of pathologic fractures. Typically a disease of postmenopausal females, osteoporosis is uncommon in the young. We present a case of a 34-year-old woman, who was diagnosed with severe osteoporosis in the setting of prolonged immobilization.

Clinical Case:

A 34-year-old woman was admitted for treatment of bacteremia in the setting of IV drug use and right hip septic arthritis leading to femoral head osteonecrosis requiring a long course of antibiotic treatment and resulting in prolonged

immobilization. She was readmitted 2 months later with septic shock and bilateral septic arthritis needing right hip replacement for source control. She developed multiple contractures of lower extremities due to prolonged immobility and was immobile for a total of 11 months despite significant physical therapy (PT) involvement. A few months into her hospital stay, she developed acute onset right ankle pain with no falls or trauma. Xrays showed right tibial metaphyseal fracture and severe demineralization of bones of lower extremities. History and physical exam showed no signs/symptoms of malabsorption, hyperthyroidism or Cushing's syndrome. Laboratory evaluation showed calcium (Ca) of 11.8 mg/dL (8.5–10.4), parathyroid hormone (PTH) < 3 ng/dL (12–72), C-telopeptide (Ctx) 1806 pg/ml (60–650) and normal phosphate, TSH, prolactin, 25-hydroxy and 1,25-dihydroxy vitamin D levels. PTHrP (parathyroid hormone related peptide) was < 2 pmol/L. 24-hour urine Ca was 414 mg (50–150). Serum and urine protein electrophoresis showed no monoclonal spike. Gonadal profile showed estrogen 42 pg/dL, FSH 1 mU /mL, LSH 0.1 mU /mL. DEXA scan showed severe osteoporosis with T-score of -3.2 at both the left femoral neck and lumbar spine. Osteoporosis and hypercalcemia were attributed to protracted immobilization. Therapy was initiated with alendronate 70 mg weekly along with vitamin D. Teriparatide was not used due to high serum Ca. Repeat labs at 6 months showed good response to alendronate with Ca 9.6, PTH 58, 24 hr urine Ca 96 and Ctx 1092. Mobilization of patient and regular PT were performed.

Conclusion:

Osteoporosis in a young adult is a rare entity and demands evaluation for secondary causes. An important and overlooked cause of bone loss is immobility and decreased load development on bones. Bone is a piezoelectric material and immobilization causes negative bone turnover. Early physical mobility and weight bearing is the most effective method of reducing bone loss. Teriparatide, due to anabolic effects has an advantage over bisphosphonates. Romosozumab (anti-sclerostin antibody) and whole body vibration are also being studied for disuse osteoporosis. Calcium and vitamin D supplementation are essential.

Adrenal

ADRENAL - HYPERTENSION

Seated Saline Suppression Testing Is Comparable to Captopril Challenge Test for the Diagnosis of Primary Aldosteronism: A Prospective Study

Jinbo Hu, MD,PhD[1], Bin Liu, MD,PhD[1], Ying Song, MD,PhD[1], Wenwen He, MD[1], Qingfeng Cheng, MD,PhD[1], Zhihong Wang, MD,PhD[1], Zhengping Feng, MD,PhD[1], Zhipeng Du, MD[1], Jun Yang, MBBS, PhD[2], Qifu Li, MD,PhD[1], Shumin Yang, PhD[1].
[1]Department of Endocrinology, the First Affiliated Hospital of Chongqing Medical University, Chongqing, China, [2]Hudson Institute of Medical Research, Clayton, Victoria, Australia.

MON-221

Abstract:

Objective: Saline suppression testing (SST) and captopril challenge test (CCT) are commonly used confirmatory tests for primary aldosteronism (PA). Seated SST (SSST) is reported to be superior to recumbent SST (RSST). Whether SSST is better than CCT remains unclear. Therefore we conducted a prospective study to compare the diagnostic accuracy of SSST and CCT.

Methods: Hypertensive patients with high risk of PA were consecutively included. Patients with aldosterone-renin ratio≥1.0 ng•dl-1/μIU•ml-1 were asked to complete SSST, CCT and fludrocortisone suppression test (FST). Using FST as the reference standard (plasma aldosterone concentration [PAC] post-FST ≥6.0 ng•dl-1), area under the receiver-operator characteristic curves (AUC), sensitivity and specificity of SSST and CCT were calculated, and multiple regression analyses were conducted to identify potential factors for false diagnosis.

Results: A total of 183 patients diagnosed as PA and 48 as essential hypertension completed the study. Using PAC post-SSST and PAC post-CCT to confirm PA, SSST and CCT had comparable AUCs (AUCSSST 0.83 [0.78,0.88] vs. AUCCCT 0.86 [0.81,0.90], P=0.308). Setting PAC post-SSST and post-CCT at 8.5 ng•dl-1 and 11 ng•dl-1, respectively, the sensitivity and specificity of SSST [0.71 (95%CI 0.64 to 0.77) and 0.82(0.68,0.90)] and CCT [0.73(0.66,0.79) and 0.80(0.66,0.89)] were not significantly different. In the multiple regression analyses, 1SD increment of sodium intake resulted in 40% lower risk of false diagnosis in SSST.

Conclusions: SSST and CCT have comparable diagnostic accuracy. Insufficient sodium intake decreases the diagnostic efficiency of SSST but not CCT. Since the CCT is simpler and cheaper, it is preferable to the SSST.

Diabetes Mellitus and Glucose Metabolism

CLINICAL STUDIES IN OBESITY, DIABETES RISK, AND CARDIOVASCULAR OUTCOMES

Features of the Severity of Cardiovascular Remodeling and Metabolic Disorders in Hypertensive Patients with Obesity in the Presence of Two Unfavorable Genotypes of the ADIPOQ and IRS-1 Genes

Anna Shalimova, MD, PhD[1], Valentyna Psarova, MD, PhD[2], Nataliia Kyrychenko, MD, PhD[2], Maryna Kochuieva, MD, PhD[3].
[1]L.T. Malaya Therapy National Institute of the NAMS of Ukraine', Kharkiv, Ukraine, [2]Sumy State University, Sumy, Ukraine, [3]Kharkiv Medical Academy of Postgraduate Education, Kharkiv, Ukraine.

SAT-612

The results of a number of studies have shown that in arterial hypertension (AH), G/T and T/T genotypes of the adiponectin gene (ADIPOQ) and Gly/Arg and Arg/Arg genotypes of the insulin receptor substrate 1 gene (IRS-1) are associated with a greater severity of metabolic disorders and hemodynamic parameters compared with G/G and Gly/Gly genotypes of these genes.

The aim of the study: to evaluate the severity of cardiovascular remodeling and metabolic disorders in hypertensive obese patients in the simultaneous presence of two unfavorable genotypes of the ADIPOQ and IRS-1 genes.

Methods: We examined 300 AH patients: 200 patients with AH and obesity, 50 patients with AH and normal body weight, 50 patients with AH and overweight, 40 patients with AH, obesity and type 2 diabetes mellitus (DM2), 30