

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

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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/ μ IU·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

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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