

weight >120% ideal body weight). Homeostatic Model Assessment (HOMAB), Insulinogenic index (IGI), Corrected insulin response (CIR), Insulin area under the curve/Glucose area under the curve (AUCins/AUCglu), and the Stumvoll 1st Phase Estimate (Stumvoll) were calculated from insulin and glucose levels measured fasting and 30, 60, 90, 120, and 180 minutes after an oral glucose load (75 grams pre-pregnancy, 100 grams in pregnancy).

Results: The best OGTT-based measure for estimation of 1st phase insulin response differed across study timepoints. In early and late pregnancy, AUCins/AUCglu had the strongest correlation with 1st phase insulin response (early: R=0.79, P<0.0001; late: R=0.69, P<0.0001), but was not associated with 1st phase insulin response pre-pregnancy (R=0.32, P=0.08). IGI had the strongest correlation with first phase insulin response pre-pregnancy (R=0.50, P=0.005) and was correlated with 1st phase insulin response in late (R=0.68, P=0.0001), but not early (R=0.36, P=0.07) pregnancy. Stumvoll was the only OGTT-based measure that was significantly correlated with 1st phase insulin response at all timepoints (pre: R=0.44, P=0.01; early: R=0.67, P=0.0001; late: R=0.67, P=0.0001). HOMAB was the weakest correlate of 1st phase insulin response, though the correlation was significant in early pregnancy (pre: R=-0.04, P=0.82; early: R=0.33, P=0.05; late: R=0.18, P=0.28).

Conclusion: OGTT-based measures of insulin secretion do not have a consistent relationship with 1st phase insulin response across pre-, early, and late pregnancy. Our findings suggest that Stumvoll can be used in OGTT-based longitudinal studies of insulin secretory response that begin prior to pregnancy and span gestation. For cross-sectional studies in pregnancy, AUCins/AUCglu are the best estimates of 1st phase insulin response.

Adipose Tissue, Appetite, and Obesity OBESITY TREATMENT: GUT HORMONES, DRUG THERAPY, BARIATRIC SURGERY AND DIET

Albuminuria and Obesity - Which Are the Associated Factors?

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MON-584

Introduction

The association between obesity and renal dysfunction has been widely studied. Albuminuria is a cardiovascular risk factor and the most prevalent marker of kidney injury in people with obesity. Despite the higher prevalence of hypertension and diabetes in those patients, other contributing factors are still unknown.

We aimed to explore the factors related to albuminuria in obesity, analyzing its variation after bariatric surgery.

Methods

We evaluated 2518 patients undergoing bariatric surgery, of those, 1243 with preoperative albuminuria measurement were included in this study. Albuminuria was determined by the albumin-creatinine ratio (RAC) in an occasional urine sample (mg/g) or by the 24-hour urine albumin excretion rate (TEA) (mg/24h). Means and medians were compared using Student's T-test or Mann-Whitney tests, respectively. Spearman correlation was used.

Results Age ($\rho = 0.073$; $p = 0.010$), body mass index (BMI) ($\rho = 0.139$; $p < 0.001$), waist circumference (WC) ($\rho = 0.220$; $p < 0.001$), glycated hemoglobin (HbA1C) ($\rho = 0.221$; $p < 0.001$), systolic blood pressure (SBP) ($\rho = 0.203$; $p < 0.001$), diastolic blood pressure (DBP) ($\rho = 0.134$; $p < 0.001$), uricemia ($\rho = 0.141$; $p < 0.001$) and C-reactive protein (CRP) levels ($\rho = 0.090$; $p = 0.017$) were positively correlated with albuminuria. Patients with albuminuria (TEA / RAC \geq 30) had higher BMI (45.0 ± 6.0 vs. 43.2 ± 5.6 kg / m²; $p < 0.001$), WC (129.3 ± 13.1 vs. 122.0 ± 12.9 cm; $p < 0.001$), SBP (142.7 ± 18.0 vs. 134.1 ± 16.5 mmHg; $p < 0.001$), DBP (88.0 ± 12.6 vs. 83.2 ± 10.3 mmHg; $p < 0.001$), uricemia (6.1 ± 1.5 vs. 5.4 ± 1.4 mg / dL; $p < 0.001$) and CRP (11.3 (16.4) vs. 8.3 (9.6) mg / L; $p < 0.001$). Excluding patients with diabetes and hypertension, BMI and WC remained statistically positively correlated with urinary albumin excretion. After surgery, the decrease of albuminuria was correlated with the reduction of HbA1C ($\rho = 0.144$; $p < 0.001$) and CRP ($\rho = 0.113$; $p = 0.037$).

Conclusion Anthropometric, inflammatory and metabolic factors, namely WC, CRP and uricemia, may be involved in the etiopathogenesis of albuminuria in obese patients. Bariatric surgery is the most effective method to reverse obesity and it has been shown to be a promising therapy on the treatment of associated renal dysfunction.

Pediatric Endocrinology

PEDIATRIC OBESITY, THYROID, AND CANCER

Pleuropulmonary Blastoma and Multinodular Goiter in a 22 Yr Old Male with DICER1 Syndrome

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MON-093

Background

DICER1 syndrome is an autosomal dominant condition due to mutations in the DICER1 gene, located on chromosome 14q32.13. Patients are at increased risk for malignant and benign tumors, including pleuropulmonary blastoma (PPB), cystic nephroma, ovarian Sertoli-Leydig cell

tumors, multinodular goiter (MNG) and differentiated thyroid cancer (DTC). MNG is very common in patients with *DICER1* Syndrome but data on incidence is lacking. MNG is more common in females than males.

Case presentation:

22 year old man who originally presented with pleuropulmonary blastoma, Type 3 at 3 years of age. His treatment included pneumonectomy, radiation of 46.6 Gy to thorax, and alkylating agents including Cisplatin, Ifosfamide and Cytosin. He developed frontal lobe metastasis over the course of 3 years and was treated with focal cranial radiation. His father and maternal uncle had history of lung cancer.

He was evaluated at the Endocrine clinic at 12 years 10 months for short stature. His height was 132.5 cm (SDS -2.96), weight 29.7 kg (SDS -2.40), and BMI 16.99kg/m² (SDS -0.61). On examination he had normal thyroid exam and Tanner 2 bilateral 4 cc testicles. He was treated with Levothyroxine for subclinical hypothyroidism (TSH: 5.96 uIU/ml (0.35–5.5) and Free T 4: 0.99 ng/dl (0.8–1.80) and growth hormone (GH) for growth hormone deficiency (peak GH was 7.7 ng/ml after Arginine and Clonidine GH stimulation test). At 14 years 10 month he developed respiratory distress. CT scan of chest showed right lower pole nodule 1.6 x 1.5 x 1.4 cm. Ultrasound of thyroid showed right thyroid solid mid pole isoechoic nodule 1.4 x 1.7 x 1.3 cm with multiple enlarged bilateral cervical nodes, largest left supraclavicular region > 1 cm. Biopsy of the right nodule was negative for malignancy. Over the course of 2 years he developed new right thyroid isoechoic nodule in the lower pole 2.1 x 2.5 x 1.9 cm and new left thyroid isoechoic nodule in the upper pole 1.0 x 0.5 x 0.5 cm. Biopsy was negative for malignancy. Due to his PPB, MNG and family history of lung cancer he was evaluated at our genetic cancer clinic and tested positive for germline *DICER1* pathogenic variant *c.4605_4606del (p.Cys1535Trpfs*3)*

Conclusion:

Our 22 year old male presented with pleuropulmonary blastoma and over the course of few years developed MNG. Genetic testing was positive for germline *DICER1* pathogenic variant *c.4605_4606del (p.Cys1535Trpfs*3)*. Our case illustrates the importance of consideration of: 1) Testing children with PPB for *DICER1* Syndrome as there are screening recommendations including regular thyroid ultrasound and examinations to look for MNG or other features concerning for thyroid gland neoplasia. 2) MNG is uncommon in children and detection of this should raise suspicion for consideration of testing for *DICER1* Syndrome.

Cardiovascular Endocrinology

ENDOCRINE HYPERTENSION AND ALDOSTERONE EXCESS

Effects of Mineralocorticoid Receptor Antagonists on Primary Aldosteronism Screening

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SAT-561

Background: Mineralocorticoid receptor antagonists (MRAs) are the mainstay of medical therapy for primary aldosteronism (PA), and MRAs also benefit patients with other forms of resistant hypertension and cardiovascular

disorders. MRAs impact the renin-angiotensin-aldosterone system (RAAS), raising concerns regarding the accuracy of PA screening. The rate of false negative and/or false positive screening for PA in patients taking MRAs has not been systematically evaluated. Herein, we assessed the alterations of both renin and aldosterone after MRA initiation in a large cohort of patients with hypertension.

Patients and Methods: We conducted a retrospective cohort study of patients with hypertension seen in a tertiary referral center. We employed our center's database search engine to identify adults with hypertension who were treated with MRAs. Of these, we included patients who had renin and aldosterone measured both before and after MRA treatment. We excluded patients with adrenal cortical cancer, end-stage renal disease, exogenous glucocorticoids, and critically ill. PA screening was considered positive when plasma aldosterone concentration (PAC) was 10 ng/dL, plasma renin activity (PRA) was 1.0 ng/mL/h, and the aldosterone-to renin ratio (ARR) was 20. Mann-Whitney test and Wilcoxon signed rank test were employed to compare independent or paired groups, respectively.

Results: In total, 109 patients (57 women), mean age 55±13 years were included. Of these, 40% had confirmed PA (14% unilateral and 26% bilateral); in 38% PA was excluded; and in the remaining 22%, testing for PA was incomplete. On average, patients were on 3 ± 1.6 antihypertensive agents; 60% of patients were prescribed beta blockers, 49% K⁺-wasting diuretics and 35% were on K⁺ supplements. Both PAC and PRA increased after MRA treatment (from 19.0 [12.6, 26.7] to 26.3 [17.2, 36.2]; and from 0.6 [0.10, 0.80] to 1.00 [0.60, 2.80], respectively, *p* < 0.0001 for both), while ARR decreased from 42.5 [18.5, 109.8] to 24.0 [10.9, 55.5] (*p* = 0.003). Of 71 patients with positive PA screening at baseline, 31 (43.7 %) no longer met positive screening criteria during MRA therapy. Conversely, 7 of 38 patients (18 %) with negative screening at baseline met criteria for positive PA screening while on MRA treatment, including 5 patients with a PAC > 20 ng/dL along with suppressed renin. The impact on PA screening accuracy remained similar irrespective of the MRA dose, duration of treatment, changes in concomitant antihypertensive drugs, or hypertension type.

Conclusions: Commonly, MRA treatment leads to renin elevation, ARR reduction, and consequential false negative PA screening. In a minority of patients, MRA therapy can be followed by aldosterone elevations asynchronous from renin, possibly via short feedback loops, mimicking PA. Whenever possible, PA testing should be conducted after MRA discontinuation.

Steroid Hormones and Receptors

STEROID AND NUCLEAR RECEPTORS

Full Antagonism of Breast Cancer Cell Proliferation Can Result from Many Ligand-Induced Conformational Distortions of the Estrogen Receptor Ligand Binding Domain

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