biomarkers, but little is known about the communications between cells. Exosomes are small extracellular vesicles (30-100 nm in diameter) released by exocytosis in almost all cell types. Due to its wide distribution and absorption by different cell types, exosomes have been considered an attractive tool for diagnosis, therapy and response evaluation. **Objective:** To characterize the exosomes released by human fat cells during differentiation and the effect of hyperplasia on the function of these. **Material and methods:** Human cells (SW-872) were cultured for 24h in DMEM-F12- with FBS serum (free of steroids and exosomes), differentiated with adipogenic cocktail for 7 days, and hypertrophy for further 24h G1 agonist treatment. Exosomes were isolated from conditioned medium of SW872 cells by ultracentrifugation and characterized by immunoblotting against exosomal markers, (Nanoparticle Tracking Analysis (NTA) and transmission electron microscopy (TEM). Cancer initiating cells (CICs) were isolated from HeyA8 ovarian cancer cells using culture selecting conditions. CICs were 24h treated with exosomes (1x1011 particles/mL) and then seeded over matrigel to carry out 3Dmigration assays. **Results:** SW872 cells showed the morphological characteristics described for this cell line and MR expression was observed. Successful isolation of SW872-derived exosomes was confirmed by assessing the particle size distribution by NTA, the morphology by TEM and the presence of exosome markers (Alix, HSP70, TSG101, and CD36) by immunoblotting. Preadipocyte differentiation showed a significant decrease in the exosome concentration (pre,$1.3x10^{11}$ particles/ml vs adipo, $1.5x10^{10}$ particles/ml p <0.0001) and in the size of these nanovesicles (102.2 ±3.1nm vs 69.8 ±20.1nm p = 0.05). When the differentiated cells become hydrophobic the concentration of exosomes released showed a significant increase in the concentration ($1.5x10^{10}$ part/ml vs $5.5x10^{10}$ part/ml p <0.0001) and no changes in size were observed (139.5±15.2 nm vs 119.9±14.3). A functional 3D analysis shows that exosomes from hypertrophic adipocytes induce an increase on the migration of HEYA8 o-derived CICs.**Conclusions:** These preliminary results show that during the differentiation of the adipocyte the position of exosomes probably change as a reflection of cell specialization. Hypertrophic cells-derived exosome can modulate the migratory capacity of CICs a reflex of change of exosome content during differentiation. Further analysis will analyze the exosome cargo (i.e. miRNA) during this process.

Bone and Mineral Metabolism

BONE AND MINERAL CASE REPORTS II

Craniofacial Deformities with Hypercalcemia: A Rare Case of Co-Existing Primary Hyperparathyroidism and Paget's Disease of the Bone Since Young Adulthood.

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MON-357

Background:

Primary Hyperparathyroidism (PHPT) and Paget's Disease of the Bone (PDB) are two distinct bone mineral disorders which rarely co-exist. It has been very scarcely reported in the elderly but almost unheard of in young adults.

Clinical case

A middle-aged Indian lady presents with multiple and recurrent facial and jaw bony swellings, since the age of 12. She had normal developmental as a child, without visual, auditory deficits or limb deformities. No family history of hypercalcemia or endocrine disorders was elicited. At initial diagnosis, biochemical parameters were consistent with PHPT, with mild to moderate hypercalcemia (2.6-3.0 mmol) and concomitant hypophosphatemia (0.6-0.8 mmol/L), elevated intact PTH 10.6pmol/L and ALP persistently more than 350 U/L. She had undergone multiple surgeries to remove the bony swellings, presumed to be brown tumours. She developed medullary nephrocalcinosis approximately 30 years after onset of illness. Over a span of three decades, numerous modalities were employed in attempt to localise the parathyroid lesion, including imaging (ultrasonography, sestamibi with SPECT CT, FDG PET),angiography, venous sampling and exploratory neck surgeries which were unsuccessful. Due to failure in localising the offending parathyroid lesion, it was conceded to maintain her on medical therapy.She was initially started on oral phosphate therapy, intranasal calcitonin and subsequently calcimimetics. Aside from rising ALP levels, her other biochemical parameters remained static. Her diagnosis was re-evaluated when she presented with osteomyelitis of the right mandible requiring surgery. Pre -operative CT imaging showed mixed lytic and sclerotic lesions at the mandible, maxilla, facial bones and skull. It also revealed diffuse thickening of the calvarium with narrowing of the posterior fossa resulting in hydrocephalus, requiring a ventriculoperitoneal shunt insertion. Histopathological examination of the mandible showed a background of osteosclerosis. These findings were inconsistent with PHPT and was most often described in PDB. On the other hand, a repeated skeletal survey showed generalised osteopenia in the small bones of the hand with subperiosteal and terminal phalanges reabsorption which was in keeping with PHPT. Her pelvis, spine and long bones remained normal and bone densitometry was preserved. It was concluded that this patient was suffering from dual pathology, PHPT and PDB and was commenced on bisphosphonates.

Conclusion:

This lady presented with two diseases which simulate each other despite not being etiologically linked. The aberrancy in the age of onset and the overlapping clinical features of the dual pathology imposed a significant challenge in making the correct diagnosis. Retrospectively, histopathological examination of the bone at an earlier stage of disease may have been the key to solving this perplexing case.

Reproductive Endocrinology

CLINICAL STUDIES IN FEMALE REPRODUCTION I

Leptin, Leptin Soluble Receptor and FLI in Healthy and Preeclamptic Pregnancies

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SAT-028

Abstract

Context

Leptin is an adipokine involved in many pleiotropic and key physiological actions and circulates free and active, or inactive bound to the leptin binding protein and sOB-r. Thus, the ratio Leptin/sOB-r or free leptin index (FLI) is commonly used as a marker of leptin sensitivity in different pathologies.

Objective

Evaluate serum concentrations of leptin and sOB-r and determine FLI in healthy pregnant and mild pre – eclamptic women in the three trimesters of gestation.

Design

A nested case-control study within a prospective cohort study of pregnant women, enrolled in the Department of Obstetrics and Gynecology of the School of Medicine at Universidad Nacional.

Main Outcome Measure and Methods

From the initial cohort, 46 healthy pregnant women and 19 mild pre – eclamptic pregnant women were randomly selected. Anthropometric, biochemical and clinical parameters were determined during three stages of pregnancy [1st (11.3±2.3 weeks), 2nd (24.4±3.10 weeks) and 3rd (34.84±4.41 weeks) periods of gestation]. Data were presented as mean ± SD. A p value <0.05 was considered to be statistically significant.

Results

Serum leptin levels and sOB-r levels rose significantly throughout pregnancy in both healthy women [Leptin (1st 23.28±9.87 ng/mL; 2nd 34.58±18.45 ng/mL; 3rd 38.27±19.64 ng/mL trimester) (p=0.0001); sOB-r (1st 32.12±7.29 ng/mL; 2nd 43.26±9.25 ng/mL; 3rd 45.16±10.70 ng/mL trimester) (p<0.0000)] and preeclamptic women [Leptin (1st 29.91±9.91 ng/mL; 2nd 47.10±25.70 ng/mL; 3rd 63.00±3012 ng/mL trimester) (p<0.0000); sOB-r (1st 32.09±6.97 ng/mL; 2nd 37.54±6.33 ng/mL; 3rd 36.96±7.66 ng/mL trimester) (p=0.0380)].

Serum leptin levels were significantly higher in preeclamptic pregnant women compared to healthy pregnant women at 2nd (p=0.029) and 3rd trimesters of pregnancy (p<0.000). Additionally, serum sOB-r levels were also significantly lower in pre - eclamptic pregnant women during the 2nd (p=0.017) and 3rd trimester (p=0.0036) of pregnancy compared to healthy pregnant women. As a result, the FLI index did not vary significantly during any of the three periods of pregnancy studied in healthy pregnant women [(1st 7.99±4.85; 2nd 8.72±6.5; 3rd 9.15±5.84 trimester) (p >0.05)], whereas, in contrast, this index markedly increased throughout pregnancy in pre - eclamptic women [(1st 8.69±4.96; 2nd 13.54±8.78; 3rd 18.06±10.35 trimester) (p=0.0044)]. Indeed, the FLI index was significantly higher at 2nd (p=0.0186) and 3rd (p<0.000) trimesters of pregnancy in pre - eclamptic women compared to healthy pregnant.

Conclusions

The present results demonstrate for the first time in a longitudinal study that FLI increases significantly in pre - eclamptic pregnant women towards the end of pregnancy. Hence, high FLI index values should be further explored as a potentially valuable indicator for the clinical manifestations of this pathology.

Cardiovascular Endocrinology

ENDOCRINE HYPERTENSION AND ALDOSTERONE EXCESS

Genetic Profile of Early-Onset Aldosterone-Producing Adenomas

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SAT-554

Genetic profile of early-onset aldosterone-producing adenomas

Background: Aldosterone-producing adenoma (APA) is a major subtype of primary aldosteronism (PA) which is the most common cause of endocrine-related hypertension. The Endocrine Society clinical practice guideline suggests that young patients (< 35 years old) with a CT-detected adrenocortical adenoma and typical phenotype of PA may not need adrenal venous sampling prior to adrenalectomy. In recent years, aldosterone-driver somatic mutations have been identified in APA, and prevalence studies suggest potential effects of patient age and sex. However, the rare