Diabetes Mellitus and Glucose Metabolism

DIABETES COMPLICATIONS II

Improving Screening for Diabetic Retinopathy in a Resident Based Clinic

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Introduction Diabetic retinopathy is the leading cause of blindness in US Adults. In order to improve screening rates, we partnered with the Division of Ophthalmology and installed an onsite retinal camera at our primary care clinic. This led to an improvement in EMR reported screening rates from 20.5% to 44% over the first 3 months. We noticed that any fundus photo, whether gradable or not, led to an automatic annotation in EMR (EPIC) health Maintenance that screening had been completed. Abnormal or ungradable (quality too poor to interpret) retinal photos must be followed up with a complete ophthalmologic evaluation. We designed a chart audit to investigate further whether ungradable retinal photos were being followed up appropriately. Methods A retinal camera was installed in the clinic, and patients obtained DR screening during their routine visits from May through October 2018. The nursing staff received training on using the camera and ensuring image quality. These images were then sent to an Ophthalmologist and resulted within the work week. Patients with an abnormal or poor-quality retinal photo were contacted by their resident PCP. We did a retrospective chart review of patients with ungradable photos evaluating whether patients were contacted and whether they followed up with Ophthalmology in the 3 month period after the initial intervention. Results Of the 131 patients who received fundus photos in the study period, 29 (22%) had ungradable photos. Twenty-four of these patients were contacted and ophthalmology consulted were placed for 22 patients. Eleven (38%) of these patients went on to complete screening with Ophthalmology within 3 months of the ungradable photo. Eighteen patients, or 62% of ungradable photos, remained incorrectly identified as having completed retinopathy screening by EMR. Discussion Over reliance on EMR reporting features can lead to incorrect assumptions about DR screening. Based on this analysis, we need to design better interventions for following up on ungradable photos and ensuring appropriate follow up. One such intervention may be changing how EMR reports ungradable photos. EPIC is a widely used EMR in outpatient settings and other practices may be facing similar issues.
radiotherapy. Conclusions: Results from this pivotal phase 2 study suggest that HSA-I-131-MIBG is an efficacious and safe treatment for advanced PPGL.

Neuroendocrinology and Pituitary
CASE REPORTS IN CLASSICAL AND UNUSUAL CAUSES OF HYPOPITUITARISM II

Dome Shaped Pituitary Enlargement Warrants Detailed Endocrine Evaluation Prior to Neuro-Surgical Intervention: Case Series & Analysis
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Pituitary tumours diagnosed incidentally on imaging as sellar-suprasellar masses often undergo unwarranted Neuro-surgical intervention, often leading to the requirement of life-long post-operative hormone supplementation. Although surgery remains the primary modality in most of the Functional (except Prolactinomas) & Non-Functional Pituitary Macro-Adenomas abutting the Optic Chiasma, Several cases are feed-back adenomas due to untreated Hypothyroidism or Drug-Induced Hyperprolactinemia which require a conservative approach. These Pituitary enlargements may not only be Sellar but also at times extend Supra-sellar mimicking a surgically resectable one. In adolescents they come with a constellation of features like severe short stature & primary Amenorrhoea in Females. Noteworthy that these symptoms appear commonly in both groups of surgically resectable masses as well as the secondary pituitary enlargements which need conservative approach, thus often resulting in inadvertent Surgical misadventures.
We report 3 cases of Adolescent females referred from peripheral centre to the Neuro-Surgical take of our Institute. Both the females had severe short stature with primary amenorrhoea. The imaging characteristics in all the three patients were unique in the sense that they had uniform enlargement of the entire Pituitary extending supra-sellar without any focal hypo-intensities without any obvious mid-line shift of the Pituitary stalk & enhanced uniformly in Post-Contrast studies. We also observed that the upper margin of the masses had a uniform convexity resembling a “DOME”. Thorough Endocrine work-up revealed severe Untreated Hypothyroidism with S.TSH greater than 100 micro IU/ml. The patients were treated conservatively with Levo-thyroxine supplementation. The patients had significant Height gain with menarche in the following 4-6 months of Therapy. S.TSH normalized after 2-3 months of therapy. Repeat imaging after 6 months of therapy revealed normal Pituitary architecture without the presence of any focal lesions or enlargement.
Feedback Adenomas of the Pituitary have been depicted in the literature. “DOME” shaped Pituitary enlargement seems quite unique to all Pituitary masses which can be treated with conservative means. Pituitary masses should therefore undergo thorough Endocrine intervention before any Neuro-Surgical intervention is contemplated, specifically when the incidentally discovered masses have a “DOME” shaped symmetrical upward convexity on imaging.

Adipose Tissue, Appetite, and Obesity
MECHANISMS AND TREATMENT OF OBESITY IN HUMANS

The Effect of Adiposity on the Fasting Serum Proteome in Normal Weight and Obese Men
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In many individuals with obesity, adipose tissue is not only increased in mass but also exhibits altered function. Disordered adipokine secretion contributes to a pro-inflammatory milieu that may lead to obesity-related co-morbidities. Hypothesis-generating, high-throughput techniques can generate novel insights. Our objective was to identify proteome-wide alterations in serum proteins related to adiposity. We evaluated the fasting serum proteome in 25 men [13 normal weight (mean±SD body mass index (BMI 21.2±1.4 kg/m2) and 12 with obesity (BMI 31.5±4.8 kg/m2)]. Blood was drawn at 0, 15, 30, and 55 minutes for proteomic analysis after an overnight fast (SOMAScan, SomaLogic, Inc.). The number of proteins and pathways that significantly differed between the two groups was determined across all time points during the fasting period. Normalized protein levels were compared between adiposity groups using rank product testing. Overrepresentation of protein constituents of established biological pathways was evaluated by hypergeometric test. P-values were adjusted using the Benjamini-Hochberg method, and those with an associated false discovery rate (FDR) of <0.05 were considered statistically significant.
A total of 4,785 protein isoforms were robustly identified in serum of normal weight and men with obesity, of which 226 protein isoforms were significantly higher in obesity (vs. normal weight), and 178 were significantly lower in obesity (vs. normal weight). Higher levels of leptin and lower levels of IGFBP1 and IGFBP2 were observed in individuals with obesity during fasting (all FDR < 0.019). Functional annotation using Gene Ontology indicated that the following pathways differed most between obese vs. normal weight men: complement and coagulation cascade activation, amine metabolism, phosphatase activity, cellular response to nutrients (lipids, alcohol, and vitamin D), organic acid catabolism, and regulation of inflammatory responses. The protein isoforms identified in serum likely reflect systemic tissue-level changes in metabolism that may yield insights into the pathogenesis of obesity-related comorbidities and rational targets for intervention.

Reproductive Endocrinology
HYPERANDROGENISM

Role of Leptin-Receptor Expressing Cells in the Pathogenesis of Polycystic Ovary Syndrome (PCOS)
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