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MON-293

Objective: There is emerging evidence linking dopamine agonist (DA) use with the development of impulse control disorders (ICD) in patients with prolactinomas. On the other hand, no data exist whether DA use in acromegaly is associated with ICD. We aimed to evaluate the prevalence of ICD, psychiatric symptoms in patients with prolactinoma and acromegaly receiving DA in comparison to those with nonfunctioning pituitary adenomas (NFA) and healthy controls (HC).

Material and Method: Forty patients with prolactinoma, 40 patients with acromegaly, 38 patients with NFA and 32 HC were included in this study. All patients and controls included in the study were evaluated with revised version of Minnesota Impulsive Disorders Interview (MIDI-R), Symptom Check List (SCL-90-R) questionnaire, Barratt Impulsiveness Scale (BIS-11), Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI). All of the patients with prolactinoma and acromegaly had been receiving cabergoline therapy but patients with NFA had not been receiving cabergoline therapy at the time of the study.

Results: We detected DA associated with ICD in 3 patients (7.5%) with prolactinoma, and 2 patients with acromegaly (5%). All patients' symptoms resolved after either discontinuation of the drug or surgical intervention. There was no significant difference between patients with acromegaly and prolactinoma in terms of ICD prevalence. On the other hand, ICD was not detected in non functional adenoma and HC. There was no correlation between BIS-11 scores and total dose, mean monthly dose and duration of DA.

According to SCL-90-R, obsession and interpersonal sensitivity positivity was significantly higher in patients with prolactinoma than acromegaly (p: 0.040, p:0.010, respectively). There was no significant difference between the groups in terms of BAI, BDI and BIS-11's subscales and total scores (p> 0.005). Scl-90 somatization and depression positivity was significantly higher in patients with NFA than acromegaly (p: 0.043, p: 0.024 respectively). Likewise, scl-90 depression, interpersonal sensitivity and additional items subscale positivity was significantly higher in patients with NFA than HC (p: 0.005, p: 0.045, p: 0.045 respectively).

Conclusion: Although DA dose was significantly higher in patients with acromegaly compared to patients with prolactinoma, there was no significant difference in the prevalence of DA -related ICD. We have showed that there was no association between BIS-11 scores and total DA dose, mean monthly DA dose and duration of DA treatment. The higher prevalence of depression, interpersonal sensitivity in patients with NFA in comparison to HC supports the hypothesis the presence of a pituitary adenoma per se might cause a large psychiatric symptom burden.

Healthcare Delivery and Education

EXPANDING CLINICAL CONSIDERATIONS FOR PATIENT TESTING AND CARE

Pain Is a Major Driver of Quality of Life and Psychoemotional Health in Lipodystrophy Syndromes

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MON-121

Background Lipodystrophy is a group of heterogeneous syndromes characterized by selective loss of adipose tissue and metabolic abnormalities. The severity of pain and its possible relation to measures of quality of life (OoL) and psychoemotional and metabolic health have never been studied in-depth previously. **Methods** LD-Lync study is an international multi-center study collecting data on the natural history of different lipodystrophy syndromes. We have completed phase 1 of the study where only a single site (University of Michigan) entered data (n = 79 patients, M/F: 16/63, mean age: 46.13 ± 14.60, 56 with familial partial lipodystrophy). In this study, we sought to investigate the relationship of pain perception on QoL, psychoemotional and metabolic aspects of the disease. Brief Pain Inventory (BPI) was used to calculate pain severity (BPI-SS) and pain interference scores (BPI-IS). **Results** From the 77 who completed the questionnaires, 56 (72.73%) patients reported pain at different levels. Out of the 56, 29 (51.79%) patients had moderate/severe pain (BPI-SS ≥ 4). Patients with moderate/severe pain had "more impaired" QoL scores: physical functioning: 20 (15-50) vs. 80 (45-95), p = 0.002; limitation to physical health: 0 (0-25) vs. 75 (0-100), p = 0.002; energy/fatigue 15 (10-30) vs. 45 (20-60), p = 0.032; emotional well-being: 48 (32-60) vs. 72 (48-84), p = 0.029; social functioning: 33 (20-38) vs. 58 (35-70), p = 0.002; general health: 15 (10-25) vs. 35 (20-55), p = 0.005). Severe depression (PHQ-9 > 14) was more frequently detected among patients with moderate/severe pain (63.2% vs. 36.9%, p = 0.008). PHQ-9 score measuring depression was positively correlated with BPI-SS (r = 0.53, p < 0.001), and BPI-IS (r = 0.63, p < 0.001). Emotional burden score was also higher in patients reporting moderate/severe pain (4.0 (2.6-5.0) vs. 2.7 (1.6-3.3), p = 0.015). BPI-SS/BPI-IS scores correlated positively with disease distress (r = 0.33, p < 0.001, and r = 0.31, p = 0.010) and GAD7 scores measuring anxiety (r = 0.52, p < 0.001, and r = 0.50, p < 0.001). Anxiety (GAD7 > 10) was more prevalent among patients with moderate/severe pain (58.6% vs. 23.4%, p = 0.002). The presence of diabetes was associated with higher BPI-SS scores: 3.50 (1.50-5.00) vs. 0 (0-3.25), p = 0.030). Also, patients with HbA1c > 6.5% exhibited higher BPI-SS scores than those with an HbA1c less than 6.5%: 3.38 (1.38-5.00) vs. 1.25 (0-3.50), p = 0.030). **Conclusion** Our study reveals a high frequency of pain perception among patients with different types of lipodystrophy. Pain severity contributes

to worsening in QoL, affects physical and emotional function, and relates to psychoemotional state in patients with lipodystrophy. In addition, the presence of diabetes and higher HbA1c may potentially modulate pain in patients with lipodystrophy. Further work is needed to elucidate the pathways that regulate pain in these patients and to address it effectively.

Tumor Biology

ENDOCRINE NEOPLASIA CASE REPORTS I

To Function or Not to Function: A Rare Case of Metachronous Hormone Syndrome

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SUN-906

This is a 51-year-old female with a history of metastatic neuroendocrine tumor of the pancreas diagnosed four years ago who was admitted to the to the hospital for hypoglycemia. She initially had come to the hospital for alternative treatment of her disease using PRRT (peptide receptor radionuclide therapy). Prior to receiving treatment the patient had been asymptomatic. After receiving her first dose of PRRT the patient developed acute encephalopathy. Upon evaluation she was noted to be oriented only to person, lethargic and confused. Finger stick blood glucose at the time of her symptoms had read 17. The patient was immediately placed on D10 with improvement of her symptoms and increase of glucose to the 70s. An attempt was made to wean the patient off of dextrose however the patient continued to experience persistent hypoglycemia. Thus investigation of an insulin-secreting tumor was done. C-peptide was 3.98 ng/mL (0.81 - 5.30 ng/mL), insulin level was 26.7 uU/mL (3.0-16 uU/mL) and proinsulin level was 556 pmol/L (<22 pmol/L), while her serum glucose was below 45. Given her biochemical markers as well as improvement in glucose when treated the patient was started on Diazoxide for presumed insulinoma. Due to intolerance to the medication she was switched to Octreotide with success.

Here we present an unusual case of Metachronous Hormone Syndrome (MHS) in a patient who at presentation of her diagnosis was already found to have metastatic pancreatic neuroendocrine tumor. Typically NET present in the 4^{th} to 6^{th} decades of life and have the potential to secrete peptide hormones. Occasionally patients with tumors that appear to be nonfunctional develop symptoms of hormone secretion later in their disease such as our patient. Furthermore it is uncommon for a patient to present with metastatic NET; such was not the case for our patient. Metachronous hormone syndrome is not fully understood but may be an indication of tumor progression. In addition its mechanism of action is unknown and its been theorized to be induced by anti-tumor treatments. Perhaps this case may allow us to better understand MHS in a broader context, as this patient was found to have progression of her disease when she initially was diagnosed 4 years ago and recently presented with symptoms consistent with an insulinoma. Lastly her case may further guide us in studying various treatments for NET and their role in triggering MHS.

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Neuroendocrinology and Pituitary

PITUITARY TUMORS II

Safety and Efficacy of Levoketoconazole in the Treatment of Endogenous Cushing's Syndrome (LOGICS): A Double-Blind, Placebo-Controlled, Withdrawal Study

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MON-332

Endogenous Cushing's syndrome (CS) is a rare, serious disorder caused by chronically elevated cortisol. A phase 3, open-label study (SONICS) of levoketoconazole in adults with CS and mean urinary free cortisol (mUFC) ≥1.5 × upper limit of normal (ULN) at baseline demonstrated normalization of mUFC in 62% of those completing 6 months of maintenance treatment (Fleseriu M, et al. *Lancet Diabetes Endocrinol.* 2019;7[11]:855-865). LOGICS is an ongoing, phase 3, double-blind, placebo-controlled, randomized-withdrawal study further investigating the safety and efficacy of levoketoconazole in patients who completed the SONICS study, or patients with CS who are levoketoconazole treatment-naive (ClinicalTrials.gov identifier: NCT03277690). The primary objective of LOGICS is to evaluate the effect of withdrawing levoketoconazole treatment to placebo, versus continuing treatment with levoketoconazole, on the cortisol therapeutic response established during open-label levoketoconazole therapy. The study includes (1) a screening phase (up to 13 weeks to allow for washout of CS medications); (2) a dose titration-maintenance phase (150-600 mg BID [dosed as needed to target mUFC normalization]) of ≥14 weeks, with at least the final 4 weeks demonstrating mUFC normalization prior to advancing to the randomized-withdrawal (R-W) phase; (3) a double-blind, placebo-controlled R-W phase (levoketoconazole or placebo; up to 8 weeks); and (4) a double-blind restoration phase (levoketoconazole and placebo; 8 weeks). Patients are randomized 1:1 in the R-W phase