plaints in the period from 2013 to 2017 aged 1 to 91 were examined.
Fatty acids within the red blood cell membranes were analyzed as methyl ethers after trans-
esterification with sodium methylate using GC-MS followed by omega-3 index calculation.
RESULTS:
Deficiency of omega-3 PUFAs was found in 68.5% of patients. The most severe deficiency
was noted in children and adolescents aged 0 to 17 years (in girls to a greater extent). In age groups
of 18–44 and 45–59 years, the prevalence of severe (<4%) and moderate (4–8%) deficiency was
comparable in males and females: among 18–44-year-old men severe deficiency was noted in 5.6%,
moderate – in 29.4%, at the age of 45–59 years – in 7 and 23%, respectively; among women – 6.4,
24.4, 8.4 and 20%, respectively. In the age group of 60-74 years, prevalence of severe deficiency
was significantly higher in men, who had severe deficiency in 9.2% of cases, whereas in women of
the same age it was found only in 4.8% of cases, the prevalence of moderate deficiency is 23 and
23.8%, respectively.
CONCLUSIONS:
Such high prevalence of severe omega-3 PUFA deficiency in girls under 17 is likely due to
girls' and their parents' concerns about weight, diet and veganism, and requires the inclusion of
omega-3 index analysis in adolescent girls' screening. Thus, during the most important period – the
period of puberty – 25% of girls have metabolic and hypoxic disorders due to deficiency of omega-
3 PUFA and are at risk of not only diseases associated with metabolic disorders, but also reproduc-
tive disorders (infertility, miscarriage, fetal malformations). The obtained data is indicative of the necessity to choose dosages of omega-3 PUFAs, con-
sidering not only the patients age, but also their gender.

Neuroendocrinology and Pituitary

PITUITARY TUMORS II

AgRP and Food Cravings Decrease with Treatment of Cushing's Disease

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MON-321

Cushing's disease (CD) is characterized by chronic exposure to excess glucocorticoids due to an ACTH-producing tumor. Obesity is a prominent feature of CD, although the mechanisms of weight gain have not been completely elucidated. In some patients, obesity persists despite appropriate medical or surgical treatment of CD and normalization of cortisol levels (1). Few studies have followed patients prospectively to understand the effect of CD remission and cortisol normalization on appetite and body weight. Previous studies have not shown a correlation between appetite or food cravings and circulating total peptide YY (PYY), ghrelin, or leptin concentrations, leading to interest in other hormones which may regulate appetite in CD (2). One of these is the neuropeptide Agouti-related protein (AgRP). AgRP is known to promote appetite and decrease energy expenditure by acting as a melanocortin antagonist at the level of the hypothalamus. Plasma AgRP may be elevated in patients with active CD and decreases with normalization of cortisol levels (3). We sought to determine if AgRP may play a role in regulating appetite or food cravings in CD. Plasma AgRP was measured before and prospectively after treatment in 19 patients with CD. Patients completed surveys on appetite and food cravings at these same time points. As expected, AgRP significantly decreased following treatment for CD, with mean AgRP before treatment 128.72 pg/mL (SD 55.41) and mean AgRP after treatment 75.23 pg/mL (SD 23.46). Using a paired t-test, the mean difference of 53.5 pg/mL was significant (p=0.0006). In addition, there were significant decreases in BMI, weight, and waist circumference with CD treatment. We found that plasma AgRP concentrations did not correlate with an 8-question visual analogue scale (VAS) used to assess hunger and satiety. However, treatment of CD significantly reduced Trait Food Craving Questionnaire scores in parallel with circulating AgRP levels using a one-way analysis of variance (p=0.004). Our data suggest that AgRP may play a role in food craving, rather than appetite, in patients with CD. Further research may clarify the relationship between AgRP and food cravings in CD patients before and after treatment. References:
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Thyroid

BENIGN THYROID DISEASE AND HEALTH DISPARITIES IN THYROID II

Spontaneous Changes in TSH Levels After Thyroidectomy During Long-Term Follow-Up

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SUN-420

Background. Spontaneous serum TSH variations during levothyroxine replacement therapy and multiple dose changes in athyreotic patients seem to be frequent in clinical practice.
Aim. To describe the rate and extent of spontaneous serum TSH variations in patients after total thyroidectomy for differentiated thyroid cancer (DTC) in real-life practice, and the number of resulting levothyroxine (LT4) dose adjustments.
Methods. Data of DTC patients were prospectively collected at a single referral center between January 2005 and May 2019. TSH and fT4 serum levels, LT4 dose and formulation, and concomitant medications were recorded

at 1, 3, and 12 months after primary treatment (surgery ± radioiodine therapy), and then yearly; the data were retrospectively evaluated for this study. Visit at one month was used to tailor LT4 dose and was not considered into the data analysis. Patients with structural evidence of disease or during pregnancy were excluded.

Results. Data of 2883 evaluations (472 patients) were collected; at baseline, the median age was 49.7 years, 73.5% were females. The LT4 formulation administered at baseline were tablets (84.9%), liquid solution (11.4%), or soft-gel capsule (3.7%). Overall, in 27.5% of clinical evaluation with unchanged levothyroxine dose (341/1243), there were meaningful spontaneous TSH variations (defined as delta TSH > 1.5 mcUI/ml) at yearly follow-up visit. It is clinically significant: in 6.6% of visits, overt thyrotoxicosis was recorded. Furthermore, the treating clinicians decided to change the LT4 dose in 37.1% of cases. These figures were not significantly higher in the first years, and a rate above 25% persist even after ten years of follow-up. The median maintenance dose needed was 1.61 (interquartile range [IQR] 1.41-1.92) mcg/Kg/day for tablets, 1.54 (IQR 1.39-1.79) mcg/Kg/day for liquid solution, and 1.46 (IQR 1.23-1.71) mcg/Kg/day for soft-gel capsules. After correction for daily dose, there was no difference in the rate of TSH variations > 1.5 mcUI/ml, or in the absolute value of median delta of TSH between the three formulations. In 20.1% of patients, the LT4 formulation was changed during the follow-up: it was more common in patients with a known gastroenteric disease (OR 1.76, p=0.03).

Conclusions. TSH spontaneous variations and dose adjustments are very common in patients after total thyroidectomy, even during long-term follow-up: wide variations happen in more than 1/4 of all visits, and dose changes are needed in more than 1/3 of all evaluations. We were more inclined to change LT4 formulation in patients with known interference in LT4 absorption: however, no difference in TSH variations was recorded between users of three different formulations, even if soft-gel capsules seem to have a lower maintenance dose.

Thyroid

THYROID DISORDERS CASE REPORTS II

A Case of Unilateral Exophthalmos Due to Thyroid Orbitopathy and Its Association with Chronic Kidney Disease

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SAT-490

Graves ophthalmopathy(GO)is the most common extra-thyroidal manifestation of Graves' disease (GD). Most cases of GO are bilateral which may be asymmetric, whereas unilateral ophthalmopathy is less common and has been observed in 9-15% cases. Association between chronic kidney disease and unilateral Grave's ophthalmopathy in a clinically euthyroid patient is rare. We report a case of a 24-year-old male with no previous history of any chronic medical illnesses who presented with protruded right eye for the past 6 months. He did not have any other visual symptoms or symptoms related to thyroid disease. Laboratory results revealed low TSH, normal free T3 and free T4. TSH receptor antibodies were positive. He also had elevated serum creatinine at 418 umol/L (normal levels 64 - 110 umol/L). US KUB showed bilateral small sized kidneys and increased parenchymal echogenicity suggestive of chronic kidney disease. MRI Head showed features suggestive of unilateral thyroid associated orbitopathy. Patient received 1-week course of oral prednisolone 10 mg per day after which his exophthalmos improved.Case report: A 24 year old male with no previous history of any chronic medical illnesses, presented to the clinic with protruded right eye for the past 6 months that was progressively getting worse. There was no eye pain, visual changes, ophthalmoplegia, dryness or discharge from eye. Patient did not report any other symptoms, Physical examination revealed a comfortable man with protruded right eye, lid retraction, normal eye movements and no signs of orbital cellulitis. Neck examination was significant for a mild diffuse goitre. Laboratory studies were significant for haemoglobin of 12.1 g/dl (normal 13-17 g/dl). He also had elevated serum creatinine at 418 umol/L (normal 64 - 110 umol/L). Serum electrolytes, liver function tests and lipid profile were within normal range. 24 hr urine collection showed 3.08 gm/24 hr proteinuria. Serum TSH was 0.04 mIU/L (normal 0.45 - 4.5 mIU/L), free T4 was 13.8 pmol/L (normal 9 - 20 pmol/L) and free T3 was 4.56 pmol/L (normal 2.89 - 4.88 pmol/L). Thyrotropin Receptor Ab titre was 4.69 IU/L (normal 0.00 - 1.75 IU/L). ANA, ANCA, C3, C4, Anti thyroid peroxidase and Anti GBM antibodies were negative. Screening for hepatitis B, C and HIV was negative US KUB showed bilateral small sized kidneys and increased parenchymal echogenicity suggestive of CKD. MRI Head was remarkable for proptosis of the right eye with increased retro-orbital fat, thickening and T2 hyperintensity with sparing of the tendinous insertion involving the right inferior, medial, superior and lateral rectus muscles with crowding at the orbital apex. Features were suggestive of unilateral thyroid associated orbitopathy. Patient received 1-week course of oral prednisolone 10 mg per day after which his exophthalmos improved. An association between CKD and GO in a clinically euthyroid patient is rare.

Healthcare Delivery and Education

EXPANDING CLINICAL CONSIDERATIONS FOR PATIENT TESTING AND CARE

Development of a Culturally Competent Skills and Knowledge Assessment Tool for Patients with Diabetes

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MON-139

Training of diabetes (DM) skills is critical to assure competency of DM survival skills (e.g. glucose testing) for immediate self-care. While DM assessments exist, we sought to develop a culturally acceptable DM Skills and Knowledge Assessment (DM-SKA) tool. A systematic search of Pubmed/Medline and Scopus (1980-2017) of assessments for DM