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Serum osteocalcin is emerging as a potential marker of glucose homeostasis and risk of type 2 diabetes mellitus (T2DM). In mice, osteocalcin knockouts exhibit depressive-like behaviours but knockouts of a putative osteocalcin receptor, GPR158, are resistant to chronic unpredictable mild stress. Recently, osteocalcin release from bone has been suggested to mediate some aspects of the acute stress response. Here, we assess relationships between serum osteocalcin, depression and perceived stress in people with T2DM. Participants with T2DM were assessed for whether they met the DSM-5 criteria for Major Depressive Disorder using the research version of the Structured Clinical Interview for DSM-5 depression criteria (SCID-5RV). Subjective stress was assessed using the Perceived Stress Scale (PSS) with higher scores indicating greater subjective stress. Serum carboxylated (cOCN) and uncarboxylated (unOCN) osteocalcin were assayed from fasting morning blood by commercial ELISA. Among 87 participants (mean age 62.9±9.5, 52% women), 18 (26%) were experiencing a depressive episode (7 men, 11 women). Both serum unOCN and cOCN were associated with higher PSS scores in participants with depression (unOCN, $r=0.566$, $p=0.014$; cOCN, $r=0.564$, $p=0.015$) but not in those without depression (unOCN, $r=0.002$, $p=0.985$; cOCN, $r=0.090$, $p=0.463$). A significant interaction was found between depression and PSS scores predicting serum unOCN in a linear model adjusted for age, sex, body mass index, antidepressant use and HbA1c ($F=6.225$, $p=0.015$). The results are consistent with reports that osteocalcin release from bone may be a mediator of stress perception; however, among people with T2DM, this relationship was observed only among those currently experiencing a depressive episode.

Thyroid

THYROID NEOPLASIA AND CANCER

Clinicopathological Features of Papillary Thyroid Cancer After Fukushima and Chernobyl Accidents

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The phenomenon of a sharp increase in the incidence of thyroid cancer worldwide is now under debate. Screening activity, diagnostic improvements or real rise in incidence

as a result of unknown carcinogens are discussed. Studies in Belarus after Chernobyl showed that the synergistic influence of radiation and nitrates might lead to an increased thyroid cancer (TC) risk in children. For better understanding of the etiology, we compared the published clinical data of pediatric TC patients after the nuclear emergency of Fukushima with the observations we made after the Chernobyl accident.

In a large-scale survey after the Fukushima accident, 300,476 subjects were screened and by September 2018, 191 subjects were diagnosed with thyroid malignancy or suspected malignancy by fine needle aspiration. Mean age of TC patients was 17.8 years at presentation. Mean tumor size was 14.9 mm. Postoperative lymph node metastasis, extra-thyroidal invasion, and pulmonary metastasis were detected in 79%, 45%, and 2.1% of all cases, respectively. Only 4.8% TC cases were staged as low risk pT1aN0M0 (Suzuki et al. 2018). For comparison, in Belarus patients mean age was 13.0 years at presentation (1078 cases), mean tumor size 14.4 mm. Lymph node metastases were observed in 74%, pulmonary metastasis in 11% and extra-thyroidal extension in 48.5 - 64.1% (with respect to latency period). The low risk (pT1aN0M0) TC patients were diagnosed in 19.2% cases.

The most of TC cases from Japan and Belarus were clinically significant, not "overdiagnosed" and screened on time. Given that the accidental thyroid doses were very low in Japanese cases, it would be very important to evaluate and compare the exposure to endocrine disruptors as e.g. nitrates and low radiation doses from diagnostic procedures (dental X-ray examination and computed tomography).

Referece:

Suzuki S, Matsumoto Y, Ookouchi C, Nakano K, Iwade M, Suzuki S, Nakamura I, Fukushima T, Mizunuma H, Yamashita S, Takenoshita S. The clinicopathological features of childhood and adolescent thyroid cancer in Fukushima after the Fukushima Daiichi nuclear power plant accident. *Thyroid*. 2018; Supplement 1, (Poster 136).

Neuroendocrinology and Pituitary

CASE REPORTS IN CLASSICAL AND UNUSUAL CAUSES OF HYPOPITUITARISM II

Atypical Presentation of Isolated Adrenocorticotrophic Hormone Deficiency and Sheehan's Syndrome

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Introduction: Isolated adrenocorticotrophic hormone (ACTH) deficiency is a rare pituitary hormone deficiency defined by secondary adrenal insufficiency and normal secretion of all other pituitary hormones. Patients present with fatigue, weakness, weight loss, anorexia, nausea, low cortisol levels and low ACTH levels. Isolated ACTH deficiency is more common in males and usually presents in the fifth