cent study, using accurate assessment of left ventricular (LV) mass by cardiac magnetic resonance, demonstrated reduced cardiac mass in patients with adult onset GH deficiency and increase in cardiac mass after 1 year of GH replacement. Improved quality of life after seven years of GH replacement is reported with most marked improvement in patients with low baseline quality of life. Most of the improvement is seen during the first year of treatment but it improves further with time. All effects of GH replacement therapy are sustained for long period of time (over 10 years). What is helpful in evaluating the success of GH replacement therapy and in the deciding to continue GH replacement therapy? A recent study shows that IGF-I concentrations, quality of life, total cholesterol and waist circumference response to 2 years of GH replacement therapy predict the response.

Safety of GH replacement therapy

Safety concerns with GH replacement therapy are diabetes mellitus, malignancies occurring de novo and re-growth of residual pituitary mass .GH reduces insulin sensitivity and therefore the concern that this therapy might induce diabetes mellitus. Data from two large data bases report a slightly increased prevalence of diabetes mellitus in particular in those who are obese and who have a strong family history of diabetes mellitus while data from the most recent database show that four years of GH replacement therapy did not adversely affect glucose homeostasis in the majority of adults with GH deficiency. Available data do not suggest an increased risk of de novo malignancies or recurrence or re-growth of residual pituitary tumor. **Conclusion.** GH replacement treatment in adult GH deficient patients appears to have favorable long-term efficacy and safety profile.

KEYWORDS: growth hormone, IGF-I, GH replacement therapy.

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CHALLENGES IN PROLACTINOMA MANAGEMENT

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Case1: A woman with a long history of cabergolin treatment

Patient *B.*, 40 years, after a long period (17 years) of cabergoline treatment due to a residual prolactinoma after transnasal adenomectomy (because of bromocriptine intolerance) at 19 years of age. In the ensuing years the patient had 4 spontaneous pregnancies at the age of 27, 28, 31 and 33 years. During gestation period and breastfeeding agonist therapy was discontinued, Cabergoline therapy was discontinued during the intergestational periods due to high levels (30 000—40 000 mu/ml) of prolactin. On her last visit to the endocrinologist normprolactinemia was confirmed (0,25 mg/wk Carbegoline). FSH was on reproductive levels. According to the MRI, a cystic tumor is visualized of endoparacellular localization, sized 13×15×20 mm, with signs of postoperative alterations. Echocardiologic examination was performed, no valve pathology was found.

Case 2. A case of galactorrhea due to self-prescribed estrogene-treatment in a male-to-female transgender

This story began at the early 70's, while in the former USSR no law regulation existed on gender dysphoria and even the mere idea about the existence of such a problem was unfamiliar to Russian physicians. Patient *P.* was a normal full term male baby. At the age of 10, he started feeling a desire to wear girls' clothing. At the age of 15, he came to a firm conclusion that he was a girl, and thus started urinating like one (squatting), wearing lipstick and makeup. He also greatly suffered from having a «deformity» — his male reproductive organs. At the age of 17, working as a hospital cleaner, he began injecting himself with estrogenes and progesterone which lead to the development of mammary glands and, in the end, constant milk flow from the breasts. To receive a passport he showed this effect to the police staff and officially changed his gender to female. At the age of 23 the mammary gland showed a development stage corresponding to that of a 15—16 year old girl (due to periodical intake of estrogens) with a nipple discharge (sizable droplets upon applying pressure — galactorrhea ++). He insisted on castration and penile amputation due to feelings of shame which came from having a «deformity» inappropriate to his gender. Skull x-ray revealed normal sella turcica in terms of form and size, however there were signs of increased intracranial pressure. The thyroid gland functions were within normal limits. Radioimmunoassay was performed using standard radioimmunoassay kits (Sorin). A slightly elevated prolactin level in the blood was revealed — 24 ng/ml (normal range for males, 4—15 ng/ml). Given multiple suicide attempts, unsuccessful psychiatric treatment, female gender, and a female social role, the patient ultimately underwent castration and feminizing genitoplasty at the age of 27 as a means of social rehabilitation. Some time after surgery, the patient regained interest in life. Surgical and hormonal treatment resulted in the patient exhibiting an overwhelming maternal instinct. Being single, the patient secured her right to adopt a child, simulated pregnancy and was discharged from a maternity hospital with a son. Immediately after «labor», the patient showed significant increase in galactorrhea (+++) and forceful milk ejection reflex. The baby was nursed until the age of 6 months. These findings lead us to believe that galactorrhea in the patient may be due to several factors.

1. Increased prolactin level as a result of estrogen use and treatment with cyproterone acetate. Estrogens have long been known to increase prolactin levels in the blood, and similar properties of cyproterone acetate were shown by *K. Schmidt-Golewizer et al.*

2. Increased intracranial pressure. Its role in disorders of the neuroendocrine system (galactorrhea in particular) was demonstrated by *R. Paterson*.

3. Our report describes the second case of galactorrhea in a male-to-female transsexual in the world. The first case was reported by *R. Flückiger et al.* in 1983.

4. These findings indicate that the mechanism of lactation is independent of chromosomal sex. The possibility of drug-induced galactorrhea in males does exist.

KEYWORDS: prolactinoma, cabergoline, bromocriptine intolerance, spontaneous pregnancy, drug-induced galactorrhea, transgender, lactation.

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ELEVATED T4 AND TSH, APPROACH TO DIFFERENTIAL DIAGNOSIS

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The 'inappropriate secretion of thyrotropin (TSH)' syndrome includes two types of central hyperthyroidism: TSH-secreting pituitary adenomas (TSH-omas) and thyroid hormone action resistance (RTH). Both types are characterized by high levels of FT4 and FT3 in the presence of unsuppressed TSH concentrations in contrast to primary hyperthyroidism, where TSH levels are always undetectable. Failure to diagnose these different disorders may result in improper thyroid ablation in patients with TSH-omas or unnecessary pituitary surgery in patients with RTH. Several diagnostic steps should be carried out to differentiate the two types of central hyperthyroidism: laboratory evaluation (alpha-subunit of glycoprotein pituitary hormones (α-GSU), sex hormone-binding globulin, C-terminal telopeptide (CTx); MRI visualization; functional tests should be performed (T3 suppression test and thyrotropin releasing hormone (TRH) stimulation test); genetic analysis. The presence of pituitary lesions on an MRI scan strongly supports the diagnosis of TSH-oma. However, the usefulness of such imaging is limited by the known prevalence of pituitary incidentalomas in healthy subjects. A partial inhibition of TSH secretion after T3 suppression test is seen only in RTH patients. The TSH response to TRH stimulation is usually preserved in RTH patients. The finding of a similar thyroid biochemical phenotype in other first-degree relatives is highly suggestive of RTH. Mutations in the thyroid hormone receptor beta gene are identified in ~ 75—80% of RTH. High α-GSU concentrations and/or high α-GSU/TSH molar ratios are typically present in patients with TSH-omas. Circulating sex hormone-binding globulin levels are usually high in patients with TSH-omas, whilst being of normal level in RTH. Chronic administration of long-acting somatostatin analogs caused a marked decrease of free T4 and free T3 levels in nearly all patients with TSH-omas, while patients with RTH did not respond at all. Echocardiologic examination was performed, no valve pathology was found.

KEYWORDS: TSH-secreting pituitary adenoma, thyroid hormone action resistance, differential diagnosis, somatostatin.

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DIABETES INSIPIDUS

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Diabetes insipidus is a disorder that dramatically interferes with a patient's everyday life due to the need to constantly replenish the fluids lost in increased urination, which comes amid shortage of synthesis, secretion or action of pituitary hormone vasopressin. Differential diagnosis of types of diabetes insipidus in patients with polydipsia-polyuria syndrome is the main difficulty, for a correct diagnosis predetermines the safety and efficacy of further treatment. This session will present current concepts on the etiology, diagnosis and treatment of central diabetes insipidus (CDI). Comparative characteristics of various preparations of desmopressin for the treatment of the central form of the disease will be discussed, and features of the management of selected patient populations with CDI will be taken in consideration: during pregnancy and lactation, pathology of the thirst sensation, after traumatic brain injury and neurosurgery.

KEYWORDS: diabetes insispidus, differential diagnosis, safety, efficacy, treatment.

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PITUITARY CAUSES OF BONE LOSS

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Different hormonal disorders can influence bone metabolism and cause secondary osteoporosis. In childhood, pituitary diseases can hamper gaining of proper peak bone mass and skeletal size. In the adult life they can stimulate bone loss by increasing bone resorption and decreasing bone formation. The consequence of these processes are decreased bone mineral density (BMD) and trabecular bone score (TBS), deterioration of bone quality, diminished bone strength and finally increased bone fracture risk. Among pituitary disorders such effects are possible in patients with hyperprolactinemia, Cushing's disease, acromegaly and hypopituitarism. Hyperprolactinemia increases bone resorption and loss of BMD, there is increased fracture risk in patients with prolactinoma. Hypercortisolism due to Cushing's disease (ACTH-dependent Cushing's syndrome) diminishes formation and increases resorption of bone, causing trabecular bone loss and increased fracture risk. Moreover, there are decreased calcium absorption and disturbances in sex steroids secretion. In acromegaly, GH excess stimulates bone formation, but concomitant hyperprolactinemia and hypogonadism caused by pituitary