

— 12.4%, DN4 — 22.9% (U, $p < 0.05$). **Conclusion.** Alpha-lipoic acid cytoprotective therapy contributes to significant improvements of neuropathic status indices, oxidative stress parameters, and reduces glycemia and HbA_{1c} levels.

KEYWORDS: type 2 diabetes mellitus, alpha-lipoic acid, oxidative stress, glycemia levels, HbA_{1c}.

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A CASE OF CYCLIC ECTOPIC CUSHING'S SYNDROME DUE TO A NEUROENDOCRINE TUMOR OF THE APPENDIX

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Cyclic Cushing's syndrome (CS) is a rare disorder, characterized by repeat episodes of cortisol excess interspersed by periods of normal cortisol secretion. The so-called cycles of hypercortisolism can occur regularly or irregularly with intercycle phases ranging in duration from days to years. A 24-year-old woman with fluctuating symptoms of hypercortisolism: weight gain, "moon" face, large purple striae on the trunk and breasts, hair loss on the head, acne, hypokalemia, diabetes. Disease duration was 6 years. Laboratory investigations showed a cyclic ectopic ACTH syndrome. Levels of adrenocorticotrophic hormone fluctuated in the range from 34,0 to 299,0 pg/ml (7,0—66,0), and serum cortisol 457,0—1590,0 nmol/l (123,0—626,0). According to the results of hormonal tests, hypercortisolism cycle length varied from 2 to 11 months, with intervals of normal cortisol secretion from 2 weeks to 3 years.

CT scan revealed a mass in the ileocaecal area (2,5×2,5×4,4 cm). Right hemicolectomy was performed. Histological examination showed a neuroendocrine tumor of the appendix, G2. Our patient remained in clinical remission during a 6-years follow-up.

KEYWORDS: cyclic Cushing's syndrome, appendix, neuroendocrine tumor, ectopic ACTH syndrome.

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BONE MINERAL DENSITY — ONLY BODY MASS MATTERS IN HAVING STRONG BONES?

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There is a known association of body mass index and bone mineral density, but relative contribution of fat and lean tissue is not so well analysed yet. We aimed to investigate the effect of selected anthropometric parameters including BMI, fat content and lean body mass on BMD in postmenopausal women. Deferred to routine bone MD screening because risk of osteoporosis in menopausal

women or additional risk factors. We could say, our group of 110 women aged 43.4—83.2 years/mean 63.7 y./ is a good representative of the average population of postmenopausal women. **Material and methods.** We included a randomly chosen group of postmenopausal women, deferred to routine bone MD screening because risk of osteoporosis in menopausal women or additional risk factors. We could say, our group of 110 women aged 43.4—83.2 years/mean 63.7 y./ is a good representative of the average population of postmenopausal women in our region of Subotica, northern Serbia. For measuring BMD, Dual energy X-ray absorptiometry was performed, with Lunar type model, which gives simultaneous data of body mass, and content of lean and fat body mass. As first step multivariate ANOVA was used to find correlations between BMI, fat and lean body mass and BMD. Afterwards, Mann Whitney test was used to differentiate groups and localisations correlations. **Results.** The effect of BMI on BMD in L1—L4, femoral neck and hip is statistically highly significant with risk of mistake 0.5, 3.3 and 0.1% consecutively. T score reaches highest values in pre-obese group of patients / BMI 25—29.9 kg/m². The percentage of fat and lean body mass has no significant effect on having osteoporosis or osteopenia in this region. **Conclusion.** BMI and BMD are in tight positive correlation, regardless of the body composition — fat or muscle content. Seemingly, the most important is the mass our bones carry, which is a stimulus for osteoblast activity. We are planning further analyses to investigate eventual additional factors including age, physical activity, comorbidities, medications.

KEYWORDS: bone, postmenopausal, osteoporosis, mineral density.

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THE CASE OF TSH-PRODUCTION PITUITARY ADENOMA WITH LATE DIAGNOSIS

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A pituitary adenoma is frequent endocrine pathology. It more common in women. The first place of hormone-activity adenoma belongs to prolactinoma, the second place — somatotropinoma. The TSH-production adenoma is very rare type of hormone- pituitary neoplasias. In the report we will focus on the patient B., she is resident of a remote area of Primorsky Krai. For the first time she was hospitalized in Primorsky regional centre of diabetes and endocrinological diseases in January 2015 with referral diagnosis multinodular toxic goiter. **Of history.** The patient had three cases of hyperthyroidism (in 1983, 1988, 1995). Thyroid resection was carried out three times over the multinodular goiter with symptoms of hyperthyroidism. After the last resection appointed replacement therapy with thyroid medications (levothyrox-

ine 50 mcg in the morning). First hormonal studies conducted in the early 2000s. There was revealed a high level of TSH, but replacement therapy was continued despite the manifestations of thyrotoxicosis. Free T4 Episodic study revealed increased rates of medical and regarded as thyrotoxicosis. Clinically, the patient had symptoms of hyperthyroidism DC with lesions predominantly cardiovascular system, since 2007 atrial fibrillation, mitral and tricuspid insufficiency, replacement of heart valves. The first pair of hormones (TSH and FT4) on a clean background was investigated in 2016. In the repeated trial (which excluded a laboratory error) at the same time an elevated level of TSH (20.8 mMe/ml) and FT4 (34 pmol/l). The differential diagnosis with resistance to thyroid hormone. The study of the brain and pituitary MRI with dynamic contrast. Pituitary adenoma was found 0.2 cm in diameter. Exhibited a clinical diagnosis of TSH-producing pituitary adenoma. The patient was operated in neurosurgical center of Far Eastern federal university's medical centre. Performed transnasal transsphenoidal adenomectomy with endoscopic video navigation in January 2017. According to the results of immunohistochemistry. According to the results of immunohistochemistry: Ki-67, Alpha ingiban — negative expression. Chromogranin — weak expression in 10—20% of the cells. TSH — strong expression in 90—100% of the cells, prolactin expression severe 80—90% of the cells. **Conclusion.** IHC tumor profile best fits multigormonalnoy pituitary adenoma with minimal formation of proliferative activity of cells. When hormonal study TSH decreased to 3.45 mMe/l, retained a higher level of St. T4 30.4 pmol/l. The patient was recommended treatment with somatostatin analogues (octreotide Long 40 mg of p 1 to 28 days/m) and dopamine agonists (cabergoline 0.5 mg 2 p per week) - on 6 months follow-up examination. The patient entered into the register of entities gipotalyamo pituitary region of Primorsky Krai. This case is the second in the coastal region.

KEYWORDS: pituitary adenoma, endocrine pathology, prolactinoma, somatotropinoma.

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SECONDARY AND TERTIARY HYPERPARATHYROIDISM: CASE REPORT

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Introduction. In the treatment of secondary hyperparathyroidism of chronic kidney disease, allosteric modulators of the calcium-sensing receptor — inhibit glandular hyperplasia, reduce parathyroid hormone (PTH) levels, impact on bone turnover and mineral density (BMD). But the use of calcimimetic did not reduce the need for parathyroidectomy for refractory hyperparathyroidism. Tertiary hyperparathyroidism is a state of ex-

cessive secretion of PTH after a long period of secondary hyperparathyroidism and renal transplantation. **Case report.** We present the case of a 43-year-old caucasian male undergoing chronic hemodialysis since 2006. Laboratory investigations showed elevated levels of phosphorus 1.95 mmol/l, calcium 2.6 mmol/l, CaxP 5.07 mmol²/l², iPTH 817 pg/ml, CTx 3.1 ng/ml, OC >300 ng/ml, ALP 469.6 U/L, vitamin D deficiency 7.9 ng/ml. Ultrasound revealed multiple enlarged parathyroid glands: right superior 1.08 cm³; right inferior 0.04 cm³; left superior 0.3 cm³ and left inferior d=0.6 sm. DEXA revealed osteoporosis (Z-sc): Rad 33% -4.0; L2—L4 -1.1; total femur -2.2 SD. We have recommended dialysis with low calcium (1.25 mmol/L) and cinacalcet 30 mg/day. Laboratory investigations were done during the treatment. After normalization of serum calcium and phosphorous concentrations we have added cholecalciferol. Six months later mean iPTH and Ca×P levels decreased by 60.2 and 20.4%. Bone markers decreased by CTx 19.4%; OC 1.4%; ALP 16.8%. 25-D levels increased by 123.4%. The dynamics of BMD from baseline: L2—L4 +5.4%; Rad 33%: +9.3; total femur +6.4%. On ultrasound 3 parathyroid glands (right inferior, left superior and inferior) involute to normal size, but right superior enlarged 1.9 cm³ (+75%). Patient underwent renal transplantation in 2010 (CKD stages 1—2). After successful kidney transplantation right superior parathyroid gland did not involute. One months later he developed the tertiary hyperparathyroidism with an iPTH 815 pg/ml, calcium 3.4 mmol/l. Was recommended cinacalcet initially in dose 30 mg, then was dose-increased to 180 mg/day in 2011 (calcium 2.4 mmol/l, iPTH 634 pg/ml), added alfacalcidol 6 mcg/week, but did not control hyperparathyroidism. In 2011 performed a right superior-gland parathyroidectomy to treat severe hyperparathyroidism refractory to cinacalcet and alfacalcidol treatment. **Conclusion.** Our case study shows that cinacalcet treatment is an effective therapy of hyperparathyroidism. But enlarged gland (larger than 0.5 cm³ or 1 cm in diameter) became refractory to medical therapy and patient need for parathyroidectomy.

KEYWORDS: hyperparathyroidism, mineral density, bone, chronic hemodialysis, chronic kidney disease, parathyroid hormone.

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LONG-TERM MANAGEMENT OF RESISTANT ACROMEGALY WITH PASIREOTIDE LAR IN A PATIENT FROM AN AIP MUTATION POSITIVE FIPA FAMILY

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Introduction. AIP-related somatotropinoma patients with active acromegaly after surgery tend to be resistant to adjuvant medical therapy with somatostatin receptor