

tomography have been performed in all cases. Diagnosis has been verified by the puncture biopsy as well as surgery afterwards.

Results. Different localization of cysts has been observed in the examined patients: vertebral body and arch ThX - in 1 (7.14%) patient; vertebral body and arch LIII - 1 (7.14%) person; long bones - in 12 (85.72%) patients: I metatarsal bone - 1 (7.14%); femur neck - 1 (7.14%); intertrochanteric area of femur - 2 (14.29%); fibula head and metaphysis - 2 (14.29%); distal half of fibula - 1 (7.14%); proximal 1/3 of tibia - 3 (21.44%) patients, including 1 patient with solid variant of cyst; V metacarpal bone - 1 (7.14%); distal 1/3 of radius - 1 (7.14%). In all cases lesion has been showed as a lytic destruction area with homogeneous structure (64.3%, $p < 0.01$) or with septa (35.7%). There were bone bulging and cortical thinning at the level of the lesion. Solid variant of cyst was similar to active growing tumor: a large-size lesion with entire bone lysis. Computed tomography images have demonstrated hypervascularization of the injured area and soft tissue enlargement.

Conclusions. In 85.7% patients aneurysmal bone cyst has been described in long bones, mainly in lower extremities (71.4%, $p < 0.001$). Complex investigation can provide a correct diagnostics.

REFERENCES

1. Barrett TJ, Beall DP, Ly JQ, Davis SW: Cortical aneurysmal bone cyst of the tibia. AJR 182:740, 2004.
2. Bertoni F, Bacchini P, Capanna R et al. Solid variant of aneurysmal bone cyst. Cancer. 1993 Feb. 1; 71(3): P.729-734.
3. Burgener FA, Korman M, Pudas T. Radiologic diagnostics bones and joint diseases: guidance, atlas . Moscow 'Media', 2011: 552 P.
4. Radiologic diagnostics /edit. by Koval GYu/. Kyiv 'Medicine of Ukraine', 2009. Vol.2: 640 P.
5. Spuzyak MI. Lectures on X-ray diagnostics of musculoskeletal system's diseases. Kharkiv, 2009: 295 P.

STUDYING OF SERUM CALCIUM IN PATIENTS WITH THYROID PATHOLOGY

Somesh, Kumar Naveen, Popova E. V.

Orenburg State Medical University, Russia

It is known, the level of serum calcium is depended on calcium regulatory hormones and thyroid hormones. However, the exact

mechanism of the effect of thyroid hormones on calcium and phosphorus metabolism is not fully understood. Thyroid disorders are one of the most common endocrine pathology. Bone remodelling is affected by the direct or indirect influences of the thyroid hormones on the bone cells [11]. Thus, the TSH receptors are expressed on the precursors of osteoblasts and osteoclasts [5]. In the early life, a deficiency of the thyroid hormone can lead to a delay in the bone development [8]. An impaired mobilization of calcium into the bone can cause a depressed turnover in hypothyroidism, and this can often lead to a decrease in the blood calcium level [6]. A reduced mobilization of calcium prevails in hyperthyroidism, and this can lead to an increase in the blood calcium level [4].

The plasma contains calcium that occurs in three physiochemical states. Ionized calcium, which is also termed, as free calcium constitutes, approximately, 50%, remaining 40% is bound to the plasma proteins, and the rest 10% is complexed with small anions [9]. All plasma or serum calcium is ionized, regardless of its association with proteins or small anions; hence, the term ionized calcium is inaccurate. Because the free or ionized calcium is biologically active and tightly regulated, it is the best indicator for calcium status. Despite the measurement of free calcium being clinically more useful, it has not replaced the measurement of total calcium.

Previous studies have been carried out on serum calcium levels in thyroid disorders [1, 3]. Some of the studies revealed conflicting results. Normal values were obtained in some [10], while decreased serum calcium levels in hypothyroidism were obtained in others [2]. Hyperthyroid patients have been reported with hypercalcemia, while there are also reports of hypocalcaemia in hyperthyroid patients, with 26% of hyperthyroid patients showing hypocalcaemia.

The aim and purposes: Studying the level of the common serum calcium (CSC) according to the function of thyroid gland in patients with thyroid pathology (TP) (goiter and autoimmune thyroiditis-AIT).

Material and methods: Studying was conducted on laboratory data (TSH, CSC) in 41 patients with TP. Patients were tested by ELISA kit (TSH) and colorimetric method (CSC). Mean values, median values and standard deviations were calculated for each of the compounds in the experiment. Collected data were classified, edited, coded and entered into the computer for statistical analysis by using

«STATISTICA-10» . Statistical analysis included also doing correlation and frequency analysis.

Results: Due to we did not find to differences between levels of CSC in patients with goiter in comparison with the level of CSC in patients with AIT, we combined all patients together. Thus, according to TSH levels all patients were distributed into 3 groups: 14 patients with hyperthyroidism (TSH<0.3 mIU/ml), 18 patients with euthyroidism (TSH 0.3-3.9 mIU/ml), 9 patients with hypothyroidism (TSH>3.9 mIU/ml). The mean value of CSC in patients with euthyroidism was $1.84\pm 0.07\mu\text{mol/l}$ (reference value for test- system is about $2.0\mu\text{mol/l}$). The mean value of CSC in patients with hyperthyroidism was elevated ($2.10\pm 0.02\mu\text{mol/l}$). The mean value of CSC in patients with hypothyroidism was $1.68\pm 0.06\mu\text{mol/l}$. Same results was revealed in hypothyroid patients [7]. This shows to be the one of the important concern associated with hypothyroidism.

Conclusion: The patients with hyperthyroidism have elevation level of CSC in comparison with the level of common calcium in patients with normal function of thyroid gland. The patients with hypothyroidism have hypocalcaemia. We can suggest that level of common serum calcium is independent of character of thyroid pathology, for example- the goiter and AIT, but thyroid hormones can influence to calcium exchange. Elevation of common serum calcium in hyperthyroidism is probably resulted of stimulation of resorption of bone tissue in this pathological condition. Hypocalcaemia in patients with hypothyroidism is probably resulted deficiency of calcium regulatory hormones (f. e. parathyroid hormone). According to us there is increase in number of receptors and susceptibility of receptors for hormones also increases. These data demands further studying.

REFERENCES

1. Abe E, Sun L, Mechanick J, Iqbal J, Yamoah K, Baliram et al. Bone loss in thyroid disease: role of low TSH and high thyroid hormone. //Ann NY Acad Sci -2007- Volume 1116.- P.383–391.
2. Ashmaik AS, Gabra HM, Elzein AOM, et al. Assessment of serum levels of calcium and phosphorous in Sudanese patients with hypothyroidism.// Asian Journal of Biomedical and Pharmaceutical Sciences.- 2013.- V.3(25).- P.21-26.
3. Biondi B, Cooper DS. The clinical significance of subclinical thyroid dysfunction// Endocr Rev 2008;29(1):76–131.
4. Gomberg M.A., Trybula J.S., Kennedy A. and Sue Marion Challino S.M. Severe Hypercalcemia Secondary to Thyrotoxicosis in a Patient with

Graves' Disease in the Postoperative Setting: Assessment of Bone Turnover Markers during Treatment // Endocrine Society's 98th Annual Meeting and Expo, April 1–4, 2016 - Boston - Thyroid Case Reports III (posters).

5. Harvey C.D., O'Shea P.J., Scott A.J. et al. Molecular mechanisms of thyroid hormone effects on bone growth and function // Mol. Gen. Metab. 2002. V. 75. P. 17–30

6. Hassan K. H., Falchetti A., Jobany E et al. Evaluation of secondary osteoporosis with bone mineral densitometry and bone turnover markers //European Scientific Journal. – 2015.- V.2.- P. 234-240.

7. Khan MK, Mohiuddin MN, Owaisi N. A study on estimation of serum calcium in subclinical hypothyroid females of different age groups and its correlation with thyroid stimulating hormone (TSH). // J. Evid. Based Med. Health.- 2016- V.3(71).- P.3836-3839.

8. Mackie E.J., Ahmed Y.A., Tatarczuch L., Chen K.-S., Mirams M. Endochondral ossification: How cartilage is converted into bone in the developing skeleton// The International Journal of Biochemistry & Cell Biology, 2008, Volume 40, Issue 1, P. 46–62

9. Melmed S, Polonsky KS. Williams' Text book of Endocrinology. //In: Calcium and Phosphorous Metabolism, 12th edn. Philadelphia, PA: WB Saunders- 2011-P. 10–11.

10. Susanna TY, Sagayaraj A, Shashidhar KN et al A correlative study of thyroid profile and mineral status in patients with hypothyroidism- a hospital based case control study // Asian J Pharm Clin Res.- 2016.- Vol 9, Issue 3.- P.292-294.

11. Wojcicka A., Duncan Bassett J.H., Graham R. Williams. Mechanisms of action of thyroid hormones in the skeleton// Biochimica et Biophysica Acta. - 2013.-V. 1830- P. 3979–3986.

SOCIAL ISOLATION AS A FACTOR IN THE DETERIORATION OF ARTERIAL HYPERTENSION IN ELDERLY PATIENTS

Zazdravnov A.A.

Kharkiv National Medical University, Kharkiv, Ukraine

The main feature of contemporary demographic processes in the developed countries is an ongoing process of population aging. According to UN experts, by 2025 the total number of people aged 60 or older will reach 1.1 billion people. This process leads to an increase in social, economic and medical problems and requires new approaches to the issues of medical and preventive care for older persons. Socialization of health problems is changing the standard views on the management of patients, necessitates correction of treatment and rehabili-