

## Comment

The issue of "Progress in Medicine" we hereby present to you is devoted to imaging in endocrinology.

Endocrinology is presently one of the most dynamically developing fields of medicine. It is an exceptionally interdisciplinary specialization. The very diagnostics of endocrine diseases requires cooperation of endocrinologists not only with clinical analysts but also with radiologists and ultrasound and nuclear medicine specialists. Consultations of neurosurgeons, surgeons, obstetricians, paediatric oncologists or many other specialists are necessary to interpret the obtained examinations' results.

The above mentioned dynamic development of endocrinology is strongly related to a great progress in medical imaging techniques, beginning from classical radiology through ultrasonography, computer tomography, magnetic resonance, positron emission tomography to the most dynamically developing methods of nuclear medicine. Therefore, it seemed reasonable to devote the entire issue to the progress of imaging in the diseases of endocrine glands.

The first two original works of this issue include interdisciplinary problems related to metabolic disorders and obesity. They were prepared with the cooperation of Student Scientific Associations functioning at CMKP Clinic of Endocrinology. The population of high school students was investigated and, as a result, it was proven that a newly suggested waist-height rate (WH-R) is, similarly as the body mass index (BMI), a good predictor of the increased metabolic risk. Also, a positive correlation between cholesterol level in the examined adolescents and the occurrence of hyperlipidemia and ischemic heart disease in the family was demonstrated. This confirms the need for closer health monitoring of the children with a positive family history of metabolic disorders and cardiovascular diseases.

The article concerning imaging of the hypothalamus-pituitary gland region with magnetic resonance in the patients with diabetes insipidus has proven the usefulness of this method for confirmation of the disease, but also for revealing of its causes. A high percentage of iatrogenic diabetes insipidus in the investigated group of patients might be somewhat surprising.

Another article concerns the so far underestimated problem of complications regarding cardiac muscle morphology in the patients with hypercortisolemia. In almost all patients with Cushing syndrome, the performed echocardiography revealed abnormalities concerning the left ventricle of the heart. For this reason such examination should be performed routinely in the patients with hypercortisolemia.

The common and serious deficit of this vitamin was demonstrated in the work evaluating supply of vitamin D in the patients of Endocrinology Outpatient Clinic. Moreover, the uncontrolled administration of dietary supplements or multivitamin preparations does not compensate this deficit.

In thyroid gland ultrasound screening examinations, performed in the group of over 200 individuals of 17-18 years of age with a positive family history of thyroid diseases, nodular lesions were found in almost 9%, while characteristics of an autoimmune thyroid gland disease in almost 17% of the examined population. Because of the high percentage of the revealed changes in this group, it should be recommended to perform screening thyroid gland imaging in adolescents with a positive family history of thyroid diseases.

Considering the ongoing discussion on the specialist education system of doctors in Poland, the work concerning education with regard to internal diseases, which constitutes the basis for a sizeable part of detailed specializations, including endocrinology, is especially worth attention. The problems and risks related to the system of education in internal medicine fully justify undertaking the actions to enhance the status of this specialization, including its recognition as the priority.

The subject of imaging in endocrinology is also mentioned in the three presented casuistic works.

The first of them presents a new and difficult problem in thyreology, which is pregnancy in women with Graves-Basedov disease. The article describes two cases of pregnant women with hyperthyroidism in the course of this disease in which the result of ultrasound foetus monitoring determined further actions.

Another one presents the problems with diagnostics of adrenal pheochromocytoma. Based on the case of adrenal tumour in the woman with pheochromocytoma, the authors remind about the possibility of a clinically mute pheochromocytoma, whose diagnosis was possible thanks to a combination of imaging examinations: USG, CT, MR and MIBG scintigraphy with the most important – clinical experience.

In the third work, its Authors, on the basis of an analysis of the clinical course of adrenal carcinoma with low progression and a risk of recurrence, indicate the benefits of early application of mitotan in this group of patients.

The five theoretic articles included in this issue concern the progress in imaging of the most common endocrine disorders: thyroid gland diseases – including Graves' orbitopathy – parathyroid glands diseases, adrenal glands diseases and metabolic disorders.

In the article on new imaging methods in thyroid gland diseases, its Author devotes plenty of space to discussion of two types of elastography – compression and transverse wave, indicating their advantages and limitations. She also mentions the potential of positron emission tomography (PET) using 18-fluorodeoxyglucose, which is a method of proven value in the diagnostics of non-iodine-absorbing metastases of thyroid carcinoma and can also be used for diagnosis of cytologically suspicious small tumours.

In the article on imaging in Graves' orbitopathy, its Author emphasizes that MR and CT examinations make clinical diagnosis easier, allow us to differentiate other changes within the orbit and, which is most important – to distinguish the active phase of exophthalmos from the non-active. She also proves that the results of scintigraphy of somatostatin receptors (octreoscan) and PET can reflect the activity of infiltrative-oedematous process.

In the article on imaging of the causes of primary hyperparathyroidism, its Authors, apart from discussing the acknowledged diagnostic methods – USG, CT and scintigraphy with sestamibi, present the prospects of using the new techniques, mainly in cases of enlargement of several parathyroid glands and changes located ectopically. High hopes are related with the possibility of using single photon emission tomography (SPECT) and four dimensional computer tomography (4D-CT) in such situations.

While discussing the capabilities of diagnostics of adrenal gland tumours the Authors, apart from stressing the role of CT (with evaluation of the tumour density and contrast outwashing rate) and MR (determination of lipid content), emphasize the constantly growing role and prospects of development of scintigraphic examinations with iodine cholesterol, MIBG, octreotide, and PET with the use of various specific markers.

Finally, the traditional and modern methods of imaging of metabolic processes and their symptoms under physiological and pathological conditions were presented. Those methods allow us not only to determine body composition with the possibility of assessment of ectopically located fat, but also to investigate the function of  $\beta$  cells of the pancreas, proliferation of atheromas with imaging of their structure and even evaluation of their bursting risk.

I hope that the works presented in this issue of "Progress of Medical Sciences" will be of interest not only to endocrinologists, but also other specialists who encounter the interdisciplinary dimension of endocrinology in their clinical practice.

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