options of chromaffin tumors. It emphasizes important aspects of preparing for surgery, and discusses prognosis.

KEYWORDS: pheochromocytoma, adrenal tumors, hypertension, management.

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THYROID DISORDERS ASSOCIATED WITH IODINE DEFICIENCY IN PRACTICE OF ENDOCRINOLOGISTS

Gregory A. Gerasimov

Iodine Global Network (IGN), Moscow, Russia

Iodine deficiency (ID) impairs thyroid hormone production and has many adverse effects throughout the human life cycle. The most serious effect of ID is mental impairment in children, adolescents and adults. Goiter is the most visible and well known effect of insufficient iodine nutrition. Management of goiter and other thyroid disorders caused by ID is an important part of routine clinical practice of endocrinologists. Moreover, in dealing with thyroid disorders the clinicians should be well aware of changing patterns of iodine intake to make necessary amendments to their clinical practices. Effective goiter prevention program (combination of massive use of iodized salt and distribution of iodine supplements in vulnerable groups of population) was conducted in the USSR until 1990 and reduced goiter prevalence to nearly sporadic level. Collapse of iodized salt production in 1991—1992 led to a significant increase in goiter morbidity, especially in areas with severe ID. It took nearly half decade before this negative trend had been realized and another 10 years or more before situation had improved in the former USSR countries that had adopted universal salt iodization (USI) strategy. However, this progress has been much less spectacular in Russia and Ukraine that are still relying only on a voluntary use of iodized salt. In Russia, certain regions (Moscow, Tyumen, St.-Petersburg) with move advanced voluntary salt iodization programs may have median UIC in children in the optimum range (100—300 mcg/l). In other regions and, especially, in rural areas ID still remains widespread. Several sub-national surveys conducted in Russia regions (oblasts) in the past 10—15 years showed mild-to-moderate ID (median UIC in the range of 40 to 80 mcg/l). This uneven pattern of iodine nutrition provides another challenge to endocrinologists who should adapt their clinical strategy in dealing with thyroid disorders to potential status of iodine deficiency (or sufficiency) in the given territory. Thus, major benefits of increasing iodine intake though salt iodization in populations with mild-to-moderate ID are decrease in prevalence of goiter, thyroid autonomy and thyrotoxicosis in adults and increase in IQ in children. In the situation of optimum iodine nutrition populations, especially children, are better protected from radioactive iodine exposure in case of nuclear accident. These benefits occur at the expense of a small increase in the prevalence of subclinical hypothyroidism in adults that could be minimized by avoiding excessive iodine intakes.

KEYWORDS: iodine deficiency; goitre; universal salt iodization.

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THYROID CANCERS: THE STATE OF THE ART MANAGEMENT

Valentin V. Fadeev

First Moscow State Medical University, Moscow, Russia

Thyroid nodules are a common clinical problem, and differentiated thyroid cancer (DTC) is becoming increasingly prevalent. High-resolution ultrasound can detect thyroid nodules in 20—70% of randomly selected individuals, with higher frequencies in the elderly. The main clinical problems concerning thyroid nodules are US-based categorization of the malignancy risk and indications for US-guided fine-needle aspiration biopsy (FNA), cytological classification of FNA samples, the roles of immunocytochemistry and molecular testing applied to thyroid FNA, therapeutic options, and follow-up strategy. Recent advances in research on thyroid carcinogenesis have yielded applications of diagnostic molecular biomarkers and profiling panels in the management of thyroid nodules. Differentiated thyroid cancer (DTC), which includes papillary and follicular variants, comprises the vast majority (>90%) of all thyroid cancers. Most of the detected tumours are very small and have unknown clinical importance and malignant potential. 25% of the new thyroid cancers diagnosed in 1988—1989 were less than 1 cm compared with 40% of the new thyroid cancer diagnoses in 2008—2009. This tumour shift can be explained due to the increasing use of neck ultrasonography or other imaging very often without clear clinical indications and switch last clinical recommendations to less aggressive initial treatment with organ-saving in patients with thyroid microcarcinomas. Nevertheless clinical controversy still exists in many areas of thyroid cancer management. The management of very rare medullary thyroid cancer is now generally based on molecular testing of RET-proto-oncogen mutations. The main directions for further research in the field of thyroid cancer and nodules are optimizing molecular markers for diagnosis, prognosis, and therapeutic targets, improvement of the risk stratification and understanding of the risks and benefits of DTC initial treatment options.

KEYWORDS: thyroid nodules, differentiated thyroid cancer, fine-needle aspiration biopsy.

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GRAVES' DISEASE

Camilla Schalin-Jäntti Prof.

Helsinki University Hospital, Helsinki, Finland

Graves' disease is an autoimmune disease where activating thyroid-hormone receptor antibodies cause thy-