

Thyroid Disorders: The Contribution of the Brazilian Longitudinal Study of Adult Health in Brazil

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ABSTRACT

Thyroid disorders are common diseases in worldwide. This chapter provides information on embryology, anatomy, and physiology of the thyroid gland, foetal and neonatal thyroid metabolism, and definition and classification of thyroid disorders. It shows the normal values for the commonly measured thyroid function tests. Hypothyroidism is defined as a state in which the hypothalamic-pituitary-thyroid axis is failing, or is in danger of failing, to produce sufficient T4. Classification is according to: site of abnormality: primary (thyroid), secondary (pituitary), and tertiary (hypothalamus); onset of abnormality: congenital (prenatal) or acquired (postnatal); severity: compensated hypothyroidism and decompensated hypothyroidism. Goitre refers to thyroid gland enlargement [1]. Thyroid is sub-classified according to thyroid function: hypothyroid, hyperthyroid, or euthyroid. The chapter additionally includes information on future developments, when to involve a specialist centre, controversial points, common pitfalls, case histories and further reading, and useful information for patients and parents. Chronic diseases are the leading cause of death and hospitalization in Brazil [2]. In this regard, consideration has been attracted to cardiovascular, neoplastic, respiratory, digestive and mental diseases, but not to thyroid disorders. In such manner, consideration has been attracted to cardiovascular, neoplastic, respiratory, stomach related and mental illnesses, yet not to thyroid issue. This inconsistency between the group and individual approach probably arises because diagnosis, treatment, screening and prevention of thyroid diseases have been outstanding actions of both public health and medicine over the last two centuries. Nowadays, occurrences of patients with myxedematous facies and Graves's disorder are less frequent because of the combination of awareness among physicians of the symptoms and signs of thyroid dysfunction, accessibility of thyroid tests and utilization of reasonable medicines for thyroid substitution or for blocking hyper function of the thyroid organ. Thyroid hormones are vital to the regulation of multiple cellular and organ functions, including affecting the activity of enzymatic processes, regulation of hormone function, and maintenance of metabolism. Diseases of the thyroid gland are among the most frequently diagnosed endocrinopathies of small animals. Hyperthyroidism is most commonly diagnosed in geriatric cats and the aetiology is unknown. Various therapies can be effective in managing or curing this disease and earlier recognition has led to improved outcomes. Hypothyroidism is more commonly diagnosed in dogs and may be diagnosed in dogs of any age. Hypothyroidism is most often caused by either lymphocytic thyroiditis or idiopathic atrophy, although other causes such as druglinduced, congenital disease or dietary deficiency may also induce disease. In most of the cases, hypothyroidism can be well managed with oral thyroid hormone supplementation.

Today, there is serious concern about how effective the neonatal screening and iodine supplementation polices implemented in Brazil have been. This is due not only to the impact on children's intellectual development caused by lack of access to screening, but also to the effects of under or over supplementation of iodine. High levels of salt iodination can possibly be correlated with outcomes such as thyroid cancer and imbalance of thyroid hormone distribution in the population, thereby elevating the proportion of people with subclinical hypothyroidism or hyperthyroidism [3]. Shockingly, two activities subsidized by the Ministry of Health, named the National Program for Neonatal Screening (NPNS) and the National Survey for Evaluation of the Impact of Salt Iodation (Pesquisa Nacional para Avaliação do Impacto da Iodação do Sal, PNAISAL), have not released updated information originating from the outcomes from these reviews.

Keywords: Thyroid disorders; Antithyroperoxidase antibodies; Risk factors; Subclinical atherosclerosis

State of the problem: Thyroid disorders are common diseases, bothin Brazil and worldwide. The Brazilian Longitudinal Study of Adult

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Health (ELSA-Brasil) is a planned companion study that researches cardiovascular infections, diabetes, and related elements, including non-classical cardiovascular risk factors, for example, thyroid function. Thyroid function was classified according to thyrotropin stimulating hormone (TSH), free thyroxine (FT4), and use of medication to treat thyroid disorders, after excluding participants who reported use of any medication that could alter the results of the TSH and FT4 tests. All investigations included in this audit are cross-sectional utilizing standard information (2008 to 2010). Clinical practice: The results showed an association of subclinical thyroid disorders with biomarkers of subclinical atherosclerosis, measured by carotid intima-media thickness and coronary artery calcium, insulin resistance, metabolic syndrome, and some psychiatric disorders. No association was found with the biomarker of inflammation high-sensitivity C - reactive protein or changes in pulse wave velocity or pulse inconstancy. More than that, low TSH is associated with poorer performance on an executive function test in middle-aged adults without overt thyroid dysfunction [4,5]. The study also brings information about the distribution of positive antithyroperoxidase antibodies (TPOAb) across sex, race, age, and thyroid function. Our results are aligned with the worldwide prevalence of positive TPOAb reported in iodine-sufficient areas. In women, the occurrence of TPOAb was identified with the whole range of thyroid dysfunction, while in men; it was just identified into the occurrence of thyroid ailment.

CONCLUSION

Our results suggest that subclinical thyroid disorders and TSH quintiles were associated to subclinical atherosclerosis. Our levels of TPOAb confirm the status of Brazil regarding iodine intake as sufficient.

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