

Subclinical Thyroid Dysfunction was not Associated with Cardiac Arrhythmias in the Cross-Sectional Analysis of the ELSA-Brasil Study

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Short Editorial related to the article: *Subclinical Thyroid Dysfunction was not Associated with Cardiac Arrhythmias in a Cross-Sectional Analysis of the ELSA-Brasil Study*

Brazil lacks large cohort studies with analyses of incidence and prevalence of diseases in all areas. In this context, the ELSA-Brasil study was an important milestone for the evaluation of cardiovascular diseases in the country. This study shows a very detailed means of exposing relevant facts to the occurrence or not of arrhythmogenic electrocardiographic manifestations in patients with subclinical thyroid hormone disorders. This issue is extremely relevant, has biological plausibility and generates several doubts regarding the patient.¹

The study included a relevant sample of 13,341 patients in total, with a mean age of 51 years. The data collection, electrocardiographic specifications and laboratory tests were protocolized according to predetermined and uniform specifications in all patients. Moreover, they were comprehensively evaluated, from arrhythmias supposedly more frequent in thyroid disorders such as atrial fibrillation, plus basal heart rate, presence of extrasystoles and conduction intervals.¹

On the other hand, there was a significant disparity between patients with alterations in hormonal levels when compared to those without alterations (6.68% vs. 93.32%), which in a way affects data analysis. Furthermore, the mean age of the patients involved in the study was the youngest of all previously performed studies with similar characteristics.¹

Although it included elderly patients, the percentage was small, which may explain the small rate of cardiac arrhythmias in the studied sample. Finally, serum levels of free T4 were similar between the groups. Thus, with very

similar levels of circulating hormones, it is to be speculated that the arrhythmogenic event rates were not different from each other.¹

As mentioned in the article, the largest study published to date with similar characteristics included 23,838 patients and observed a higher incidence of atrial fibrillation in patients with subclinical hyperthyroidism. However, it was a cross-sectional study that included patients hospitalized for other comorbidities, a factor that interferes with the occurrence of events and that cannot be directly compared to studies with outpatient follow-up.²

Regarding the other studies, the only prospective studies showed results that were similar to those of the ELSA-Brasil study, performed in the outpatient setting, with a total of more than 8,500 included patients, and which did not show any differences regarding the incidence of atrial fibrillation between the groups.^{3,4} It is noteworthy that the complete analysis of electrocardiographic data was unique in the ELSA-Brasil study, which makes it relevant in the area and with original information on the subject.¹

A recent review published by Razvi et al.⁵ highlighted the fact there is little evidence of the correlation between atrial fibrillation and subclinical hyperthyroidism and that there is no indication for treatment in patients under 65 years of age and TSH between 0.39 and 0.10 mIU/L related to concerns over cardiac arrhythmias.⁵

Similarly, in acute coronary syndromes, a recent study evaluated a sample of 505 patients in Brazil and found that higher TSH values (> 4 mIU/L) at the time of the clinical presentation showed a significant correlation with the occurrence of bleeding and cardiogenic shock. However, following the same trend as other studies, there was no correlation with the incidence of cardiac arrhythmias during hospitalization and TSH values.⁶

Thus, due to the significant discrepancies between different studies and populations regarding the occurrence of cardiac arrhythmias in subclinical forms of thyroid disorders, this study alone is not capable of suggesting changes in clinical behavior, but contributes significantly to the increase of evidence, reinforcing the negative side of interactions.

Keywords

Thyroid Diseases/complications; Pathologic Processes; Thyrotropin (TSH); Arrhythmias, Cardiac; Adult.

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