

Association between Thyroid-Stimulating Hormone Levels and Non-Alcoholic Fatty Liver Disease Is Not Independent from Metabolic Syndrome Criteria

Janovsky C.C.P.S.^{a,b} · Cesena F.H.^a · Valente V.A.T.^a · Conceição R.D.O.^a · Santos R.D.^{a,c} · Bittencourt M.S.^{a,d,e}

Abstract

Introduction: Thyroid hormones are involved in the regulation of body composition, lipid metabolism, and insulin resistance. Thus, it is possible that they might play a role in the pathogenesis of non-alcoholic fatty liver disease (NAFLD). However, the role of thyroid function on NAFLD is not well defined. In this study, we evaluated the relationship between thyroid-stimulating hormone (TSH) levels, within the reference range, and presence of NAFLD in asymptomatic individuals. **Study Design:** We included all individuals evaluated at a preventive clinic of the Hospital Israelita Albert Einstein, between 2014 and 2015. The prevalence of NAFLD (analyzed by abdominal ultrasound), according to TSH quartiles, within the reference range, was determined. The association between TSH quartiles and NAFLD was analyzed by logistic regression adjusted for possible confounders. **Results:** We evaluated 10,539 individuals (73% male, age 43.4 ± 9.4 years). The prevalence of NAFLD was 34, 38, 38, and 39% in the first to the fourth TSH quartiles (0.46–1.44, 1.45–1.97, 1.98–2.68, and 2.69–4.68 mUI/L, respectively, p for trend < 0.001). At univariate analysis, higher TSH levels were associated with the diagnosis of NAFLD. When data were adjusted for the metabolic syndrome characteristics (waist circumference, HDL-cholesterol and triglycerides levels, presence of diabetes, and systemic arterial hypertension), the association was no longer significant. **Conclusions:** Although the TSH variability within the reference range is associated with NAFLD in univariable models, once adjusted for metabolic syndrome factors no significant association is noted.

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