

 THYROID FUNCTION

Poor thyroid function linked to NAFLD

Hypothyroidism has been implicated in the development of nonalcoholic fatty liver disease (NAFLD), but these data have given conflicting results. Now, in data from a new study, poor thyroid function is shown to be significantly associated with an increased risk of developing NAFLD.

“Prior studies regarding the association between thyroid function and NAFLD risk have yielded controversial results, mainly due to small sample sizes and cross-sectional designs,” explains study author Arjola Bano.

The team used data from The Rotterdam Study for what is the first prospective investigation assessing thyroid function and the risk of NAFLD. In total, 9,419 individuals with baseline thyroid function and fatty liver index measurements were included; the presence of NAFLD was assessed by ultrasonography at follow-up.

At ~10 years follow-up, increased levels of free T_4 were associated with a decreased risk of NAFLD (OR 0.33, 95% CI 0.22–0.48 per 1 ng/dl of free T_4). Those in the lowest free T_4 tertile had 1.31-times greater risk of developing NAFLD than those in the highest tertile (95% CI 1.11–1.56). These risks were independent of

possible confounding factors, such as cardiovascular risk factors.

Conversely, those individuals with increased TSH levels were at greater risk of developing NAFLD (OR 1.09, 95% CI 1.01–1.19 per 1 log TSH), although this risk was slightly attenuated when adjusted for cardiovascular risk factors (OR 1.07). Importantly, the team found a significant decreasing trend in NAFLD risk across patients from clinical hypothyroidism to clinical hyperthyroidism ($P = 0.003$).

Finally, Bano and colleagues also assessed the likelihood of developing NAFLD with liver stiffness, which

might indicate the development of fibrosis. Overall, the risk of developing NAFLD with increased liver stiffness was 2.30-fold higher in patients with subclinical hypothyroidism than in those with euthyroidism, which remained significant after additional adjustments for cardiovascular risk factors were included in the analysis.

“Our large prospective population-based study ... demonstrates that lower thyroid function is associated with an increased risk of developing NAFLD,” says Bano. She concludes, “our findings highlight the need for future investigations on possible preventive or therapeutic interventions, such as screening of thyroid function in patients with NAFLD or treatment decisions in subclinical thyroid dysfunction.”

Tim Geach

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