The risk of developing non-alcoholic fatty liver disease in adult patients with subclinical hypothyroidism compared to euthyroid: an evidence-based case report

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ABSTRACT
Background: hypothyroidism is a common concomitant disease of non-alcoholic fatty liver disease (NAFLD). Previous studies regarding the relationship between subclinical hypothyroidism and NAFLD showed conflicting results, ranging from a strong association to not significant one. This case report aimed to investigate the risk of developing NAFLD in subclinical hypothyroidism patients. Methods: literature searching used ScienceDirect, PubMed, ProQuest, and Scopus. Filtering process of titles and abstracts by using inclusion and exclusion criteria yielded 4 eligible articles (1 systematic review, 1 prospective cohort, 1 retrospective cohort, and 1 case-control study) for answering the clinical question. Critical appraisal was conducted by using worksheets from Centre for Evidence-Based Medicine, University of Oxford. Results: the systematic review was considered invalid due to its less comprehensive search for relevant studies, inappropriate article selection to find a causal relationship between diseases, and statistical heterogeneity. The retrospective cohort was decided unimportant because it possessed a relative risk of 0.85 (95% confidence interval [CI], 0.72--1.00) which the upper limit of its CI included 1.00. The rest were valid and had important risk relative and odds ratio (1.27 [95% CI, 1.09--1.47], 3.41 [95% CI, 1.16--9.98]; respectively). The number needed to harm (5 - 17) indicated the clinically meaningful harm of the exposure since only a few patients with subclinical hypothyroidism is needed to obtain one additional NAFLD incidence. Those two articles were also suitable to be applied in our case. Conclusion: patients with subclinical hypothyroidism, compared to euthyroid patients, are at higher risk of developing NAFLD.