Fatty liver index is a strong predictor of changes in glycemic status in people with prediabetes: The IT-DIAB study

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Résumé en anglais	BACKGROUND & AIMS: In patients at metabolic risk, nonalcoholic fatty liver disease is a strong and highly prevalent predictor for type 2 diabetes. Its assessment in clinical practice is not easy but the fatty liver index (FLI) could be used as a surrogate. Here, we studied the association between the FLI and the conversion to new-onset diabetes (NOD) or prediabetes reversion in patients with prediabetes. METHODS: The IT-DIAB observational study included 389 individuals with prediabetes, defined as fasting plasma glucose (FPG) between 110 and 125 mg/dL. NOD conversion was defined as a first FPG value ≥ 126 mg/dL and prediabetes reversion as a first FPG value < 110 mg/dL. The associations of both events with baseline FLI were studied separately using multivariate Cox models. RESULTS: After a median follow-up of 3.9 years (range 0.1-6.1), 138 individuals (35.5%) converted to NOD. FLI was associated with a higher risk of NOD conversion (unadjusted HR per SD = 1.54, 95%CI 1.27-1.86, p<0.0001), even after multiple adjustment on FPG, HbA1c and diabetes risk score (adjusted HR per SD 1.31, 95%CI 1.07-1.61, p = 0.008). FLI was also associated with prediabetes reversion: adjusted HR per SD = 0.85, 95%CI 0.75-0.96, p = 0.0077. Changes in FLI were significantly associated with changes in FPG during follow-up (p<0.0001). When compared to a full model including the diabetes risk score, FPG, HbA1C and FLI, only HbA1C added a significant prediction information (AUROC: 72.8% for full model vs 69.4% for the model without HbA1C; p = 0.028), while the removal of FLI to the full model did not alter its predictive value (AUROC 72.2%). The predictive value for NOD conversion was not significantly better for HOMA-IR compared to FLI (AUROC: 69.3 vs 63.7%, p = 0.067). CONCLUSIONS: FLI is a simple, practical score to further stratify the risk of conversion to NOD or the possibility of prediabetes reversion in clinical practice, independently of classical glucose parameters. TRIAL REGISTRATION: ClincialTrials.gov number NCT01218061 and NCT01432509.
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