

PRESENTATION 1

Utilising Features of Metabolic Syndrome to Cost-Effectively Improve MAFLD Diagnosis Rates in Intelligent Liver Function Testing (iLFT)

*Cassandra X Baiano, Jennifer H Nobes, Madeleine M Caven, Iain MacPherson, John F Dillon
The Universities of St. Andrews & Dundee (ScotGEM)*

Background

A novel, algorithm-based testing pathway called “intelligent Liver Function Testing” (iLFT) has been developed in order to facilitate the diagnosis of liver disease. 29.9% of iLFT is returned with descriptive outcomes of elevated ALT alongside other abnormalities, but without a definitive diagnosis. These cases will proceed to costly investigations and lengthy wait times for liver clinic.

Once investigated, 69% of patients with descriptive outcomes will have fatty infiltrates in their liver on ultrasound scan, consistent with Metabolic Associated Fatty Liver Disease (MAFLD), or metabolic associated steatohepatitis (MASH). MAFLD is closely associated with metabolic syndrome and often presents with deranged liver function tests, but requires further investigations. Investigation and treatment is key as MAFLD is one of the leading causes of mortality from liver disease and cancer.

Methods

The aim of this study was to cost-effectively improve the iLFT algorithm so that more patients can be confidently assigned a definitive diagnosis of MAFLD/MASH instead of a descriptive outcome.

Results

In a binomial logistic regression, BMI and glucose impairment were found to be the strongest predictors of fatty infiltrates in the liver. The iLFT algorithm can be improved to aid the diagnosis of MAFLD by stratifying patients into three BMI categories (≤ 26 , 27-34, ≥ 35), adding HbA1c, HDL cholesterol, and triglycerides to iLFT panel. This can safely increase the diagnosis rate, reduce referral to ultrasound scan by 18.70%, and reduce referral to liver clinic by 8.22% (95% sensitivity, 95% PPV).

Key Messages

The improvement to the algorithm offers a savings of £18.57 for every £1 spent.

