

PS-106

Non-alcoholic fatty liver disease and relative risk of incident steatohepatitis, cirrhosis and hepatocellular carcinoma events in four European primary care databases

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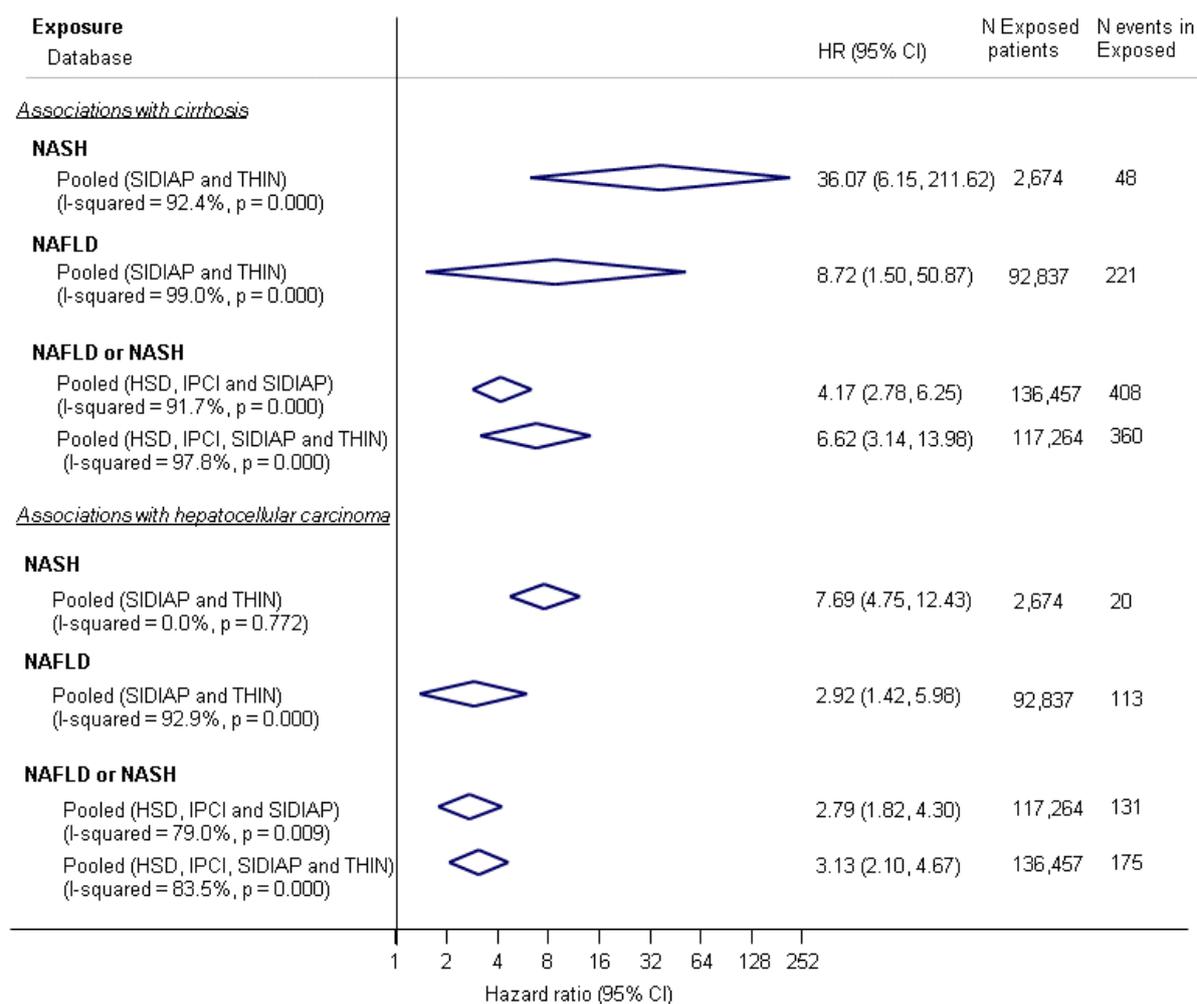
Background and Aims: Non-alcoholic fatty liver disease (NAFLD) is a condition with no clinical symptoms that progresses in some patients to steatohepatitis (NASH), cirrhosis and hepatocellular carcinoma. Here, we identified NAFLD or NASH patients from 18 million patients' records; and estimated their risk of liver disease compared to individually matched patients.

Method: Primary care data were extracted from the UK, the Netherlands, Italy and Spain. Adult patients with a NAFLD or NASH diagnosis and without past liver disease or alcohol abuse were enrolled and followed up for incident cirrhosis and hepatocellular carcinoma events. Within a database, each NAFLD patient was matched to up to 100 "non-NAFLD" patients by practice site, gender, age ± 5 years, and visit recorded within ± 6 months. Hazard ratios were estimated using Cox models adjusted for age and smoking status, and stratified by matching. Estimates were pooled across studies by random effects meta-analyses.

Results: There were 136,457 recorded NAFLD/NASH patients enrolled in our study (2,674 NASH patients only available in Spain and UK) who experienced 408 recorded cirrhosis and 175 recorded hepatocellular carcinoma events (Figure 1). At baseline, NAFLD patients had elevated transaminases levels, and were more likely to have diabetes, hypertension and obesity than matched non-NAFLD. Follow-up varied from 2-5 years in the databases. Associations were significant with non-alcoholic cirrhosis and hepatocellular carcinoma; and were 2-3x higher in NASH only patients compared to NAFLD only or NAFLD/NASH. HRs were marginally reduced when adjusting in addition for body mass index. Associations were heterogeneous across databases: higher in the UK for incident cirrhosis; and higher in the UK and the Netherlands for hepatocellular carcinoma.

Conclusion: A recorded NAFLD diagnosis is indicative of an increased risk of adverse liver outcomes; and the excess risk is graded according to severity with higher excesses in patients diagnosed as NASH. HR estimates concurred with previous studies. Heterogeneity across databases probably reflect medical practice, with the disease probably being diagnosed at a more advanced stage in the UK.

Figure: Association of NAFLD and NASH with incident liver outcomes



N: Number of; HR: Hazard ratio; CI: Confidence interval; THIN: The Health Improvement Network (UK); HSD: Health Search Database (Italy); SIDIAP: The Information System for Research in Primary Care (Spain); IPCI: The Integrated Primary Care Information (Netherlands). NAFLD and NASH were distinguishable in THIN and SIDIAP.