Predicting severe liver disease: Obesity, insulin, diabetes, cholesterol, alcohol

April 22 2017

A study conducted in Finland, presented today, demonstrates that in the general population, central obesity, insulin resistance, diabetes, lipid abnormalities and high alcohol consumption were the strongest predictors of severe liver disease. The study, presented at The International Liver Congress 2017 in Amsterdam, The Netherlands, also found that the only significant predictor of severe liver disease among individuals who consume high amounts of alcohol (more than 210 g/week in men, and more than 140 g/week in women), is diabetes.

Using metabolic and alcohol consumption data from the Finnish Health 2000 Study, a nationally representative cohort, the researchers investigated which metabolic factors best predicted severe liver complications and classified the results by the amount of alcohol consumed. For those with no or mild alcohol use, age, total cholesterol, HOMA-index (a measure of resistance to insulin and how well the cells that secrete insulin are functioning) and waist circumference predicted the development of liver disease.

According to the World Health Organization, Europe is the heaviest drinking region in the world in terms of prevalence of alcohol consumption; therefore alcoholic liver disease (ALD) is an important issue for Europe to address.1 Whilst many people who consume more than 60 g of alcohol a day (equivalent to half a bottle of wine or more than a litre of beer) will develop steatosis (accumulation of fat in the liver), only a minority will go on to develop the more serious condition of alcoholic liver inflammation (alcoholic hepatitis) and between 10 to

20% will develop cirrhosis (irreversible scarring of the liver).2 Alcohol consumption is responsible for nearly 5.9% of all deaths globally and 139 million disability-adjusted life-years (DALYs) lost due to premature death from alcohol.1

"The results of this study can help us identify which people are at risk of developing severe liver disease, so that we can work with them to reduce those risks," said Dr Fredrik Åberg, Transplantation and Liver Surgery Clinic, Helsinki University, Finland, and lead author of the study. "It's important that the risk factors identified in our study are considered for use in future risk models so that doctors can identify and counsel those patients at risk for developing liver disease."

The study included 6,732 people without known liver disease who were representative of the general Finnish population and had participated in the Health 2000 Study, which was conducted from 2000 to 2001. Follow-up data on liver related hospital admissions, deaths and liver cancer were collected over the following decade.

"These data emphasise the important role of diabetes and metabolic syndrome in the development of liver disease, reinforcing the need to consider liver disease in such patient groups," said Prof Philip Newsome, Centre for Liver Research & Professor of Experimental Hepatology, University of Birmingham, United Kingdom, and EASL Governing Board Member.

More information: Abstract: Interaction between alcohol use and metabolic components in predicting severe liver disease in the general population - a decade follow-up of a nationally representative cohort (GS015), The International Liver Congress 2017.

References:

1 World Health Organization. Global status report on alcohol and health 2014. Available from: apps.who.int/iris/bitstream/10 … 0692763_eng.pdf?ua=1. Last accessed: April 2017.

2 European Association for the Study of the Liver. EASL Clinical Practical Guidelines: Management of Alcoholic Liver Disease. Available from: www.easl.eu/medias/cpg/issue9/Report.pdf. Last accessed: April 2017.