

## **NAFLD: the triangular relationship with type 2- diabetes and cardiovascular disease**

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Non-alcoholic fatty liver disease (NAFLD) encompasses a spectrum of liver diseases from simple steatosis with hepatic lipid accumulation to end stage liver disease with decompensated cirrhosis, liver failure and hepatocellular carcinoma. Recent data from the USA showed that in 2013, NAFLD was the second most frequent indication for liver transplantation behind Hepatitis C. Since there are now effective treatments for Hepatitis C and there is currently no licensed treatment for NAFLD, it has been predicted that over the next 10-15 years, NAFLD will replace Hepatitis C as the most frequent indication for liver transplantation. Besides, increasing the risk of hepatocellular carcinoma and end stage liver disease, recently it has become clear that NAFLD also increases risk of extra-hepatic diseases such as type 2 diabetes (T2DM), cardiovascular (CVD), cardiac diseases and chronic kidney disease. Of each of these extra-hepatic diseases, the evidence to date suggests that NAFLD is a strong risk factor for T2DM. When NAFLD occurs in combination with obesity and insulin resistance (as it frequently does), there is a marked increase in risk of incident T2DM with possible synergism occurring between liver fat accumulation, insulin resistance and obesity, to further increase risk of development of T2DM. When T2DM develops, there is a further increase in risk of progression of liver disease to liver fibrosis and development of premature vascular disease. Thus, there is a reciprocal relationship between NAFLD as a risk factor for T2DM, and T2DM as a risk factor for liver disease progression and vascular disease. Recent evidence now points to the importance of NAFLD as an independent risk factor for cardiovascular disease, cardiac disease and premature vascular ageing. The presentation will describe and discuss the triangular relationship between NAFLD, type 2 diabetes and cardiovascular disease.