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Lipidomic-based investigation into the regulatory effect of schisandrin B on palmitic acid level in non-alcoholic steatotic livers

Hiu Yee Kwan, Tiejun Tong, Wang Fun Fong, Zhi-Ling Yu and Aiping Lu
Hong Kong Baptist University, China

Schisandrin B (SchB) is one of the most abundant and bioactive dibenzocyclooctadiene derivatives found in the fruit of Schisandra chinensis. Here, we investigated the potential therapeutic effects of SchB on non-alcoholic fatty-liver disease (NAFLD). In lipidomic study, ingenuity pathway analysis has highlighted palmitate biosynthesis metabolic pathway in the liver samples of SchB-treated high-fat-diet-(HFD)-fed mice. Further experiments showed that the SchB treatment reduced expression and activity of fatty acid synthase, expressions of hepatic mature sterol regulatory element binding protein-1, tumor necrosis factor-α and hepatic level of palmitic acid which is known to promote progression of steatosis to steatohepatitis. Furthermore, the treatment also activated nuclear factor-erythroid-2-related factor 2 which is known to attenuate the progression of NASH-related fibrosis. Interestingly, in fasting mice, a single high-dose SchB induced transient lipolysis and increased the expressions of adipose triglyceride lipase and phospho-hormone sensitive lipase. The treatment also increased the plasma cholesterol levels, 3-hydroxy-3-methylglutaryl-CoA reductase activity and reduced the hepatic low-density-lipoprotein receptor expression in these mice. Our data not only suggested SchB as a potential therapeutic agent for NAFLD, but also provided important information for a safe consumption of SchB, because SchB overdosed under fasting condition will have adverse effects on lipid metabolism.

hykwan@hkbu.edu.hk

Evaluation of the impact of pre and post-transplant metabolic derangements on the neurological complications following liver transplantation

Mohamed Mohamed Bassam Faek Mohamed Hashem
Cairo University, Egypt

Neurologic complications after liver transplantation are a major source of morbidity and mortality and proper prediction for those at risk may help in improving the outcome. The results of our study showed that severity of end stage liver failure prior to transplantation might be the most common risk factor for the development of post-transplant neurological complications and careful evaluation of other risk factors may be required for those patients in order to decrease the incidence of complications. Still the use of tacrolimus is associated with risk of neurological complications and reduction or discontinuation of tacrolimus lead to improvement of neurological complications. According to our study, electrolytes and metabolic derangements are not risk factors for development of neurological complications. Although the risk of neurological complications in our series is high but there was no impact on the survival.

mohamedhashem50@hotmail.com