

Abstract

Chronic liver inflammation is a process that results in the distortion of the liver parenchyma. Constant damage caused by inflammation would lead to formation of fibrotic tissue which can impair the normal liver physiology. Liver fibrosis is one of the common causes of morbidity and mortality worldwide. Non-alcoholic fatty liver disease (NAFLD) is a pathological state that is characterised by excessive accumulation of lipid in the hepatocytes (hepatic steatosis) which can trigger the inflammatory response in the liver. Carotuximab (TRC 105) is a monoclonal antibody that has been used for the treatment of a number of cancers, including hepatocellular carcinoma (HCC).

The aim of this study was to investigate the role of carotuximab in liver inflammation in a mouse model of 3,5-diethoxycarbonyl-1,4-dihydrocollidine (DDC)-induced liver fibrosis. Eighteen 3-month-old C57BL/6 male mice were recruited in this study. They were divided into three groups: control group (n=6) – fed chow diet for the period of 4 weeks, DDC group (n=6) – fed DDC diet for the period of 4 weeks, DDC group treated with carotuximab (DDC+TRC, n=6) - fed DDC diet for the period of 4 weeks and to that TRC 105 (15mg/kg) was administered. The impact of the diet and TRC 105 on mouse weight, as well as the effect on liver damage (levels of alkaline phosphatase, ALP), were evaluated. Several markers of inflammation (NF- κ B, ICAM-1, COX-2, HO-1) were evaluated by Western blot analysis.

The results of this study confirmed the presence of liver damage and upregulation of inflammatory markers after DDC diet. However, no considerable effect on inflammatory markers was revealed after TRC 105 treatment, in relation to the group treated with DDC diet only. Thus, further studies will be necessary to investigate a possible impact of carotuximab treatment on hepatic inflammation.