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Ursodeoxycholyl Lysophosphatidylethanolamide Protection against Injury during Hepatic Cholestasis and Biliary Ischemia

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Liver transplantation becomes more important in recent days. This depends on an increasing number of acute and chronic liver failure. During liver transplantation, different complications can appear in the process. The most common ones are vascular and biliary complications. Ischemia, reperfusion, cholestasis and toxic bile acids lead to a change in the hepatobiliary system leading to an increase in cell damage and apoptosis.

In this study we used the hepatoprotectant Ursodeoxycholyl lysophosphatidylethanolamide (UDCA-LPE) to prevent the bile duct from damage during transplantation. We had two in-vitro-models representing two complications: The first one included the effect of toxic bile acid on hepatocytes. The other one included the effect of the ischemia-inducing $CoCl_2$ on biliary epithelial cells. In both models UDCA-LPE was protective by inhibiting the Mcl-1 degradation via GSK-3 α/β phosphorylation.

UDCA-LPE upregulates the anti-apoptotic cIAP2 protein and the cFlip protein in biliary epithelial cells. These proteins were not upregulated by inhibiting their degradation. But cFlip mRNA was upregulated. Further work is needed to investigate their transcriptional control.

UDCA-LPE is shown to be protective against NASH. After liver transplantation UDCA-LPE can prevent the donor liver from injury due to recurrent of steatosis and cirrhosis. UDCA-LPE could be used as an agent to prevent cholestasis and complications associated with liver transplantation.