

## Expression of nitric oxide synthase protein and gene in the splanchnic organs of liver cirrhosis and portal hypertensive rats

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### Abstract

**AIM:** To investigate the expression of endothelial NO synthase (eNOS), inducible NO synthase (iNOS) protein and eNOS mRNA gene in the splanchnic organs of liver cirrhosis and portal hypertensive rats.

**METHODS:** In control and CCl<sub>4</sub> induced liver cirrhotic rats, the expression of eNOS and iNOS proteins was detected by immunohistochemical method, and eNOS mRNA was detected by in

situ hybridization.

**RESULTS:** The expression of eNOS protein and eNOS mRNA increased in most organs of the cirrhotic rats, including bronchial and alveolar epithelial cells, renal tubular epithelial cells and mesenchyma, endothelial and adventitial cells of aorta and superior mesenteric artery, whereas no significant increase of iNOS protein was found. In the hepatic tissue, NOS protein and eNOS mRNA were present in mesenchymal cells and vessel adventitial cells, no difference was observed in the expression between control and cirrhotic rats.

**CONCLUSION:** The expression of NOS varied in region. In splanchnic organs and vasculars there was an increased expression of eNOS which induced aplanchnic vasodilation and increased the inflow of portal vein, while in the liver tissue and blood vessel showed no increased expression, which may be associated with increased intrahepatic vascular resistance.

**Key words:** Nitric oxide synthase; Liver cirrhosis; Hypertension, portal; Immunohistochemistry; Gene expression; Rats

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