

عنوان مقاله:

Mitochondrial dysfunction as a mechanism involved in the pathogenesis of Cirrhosis-associated cholemic nephropathy

محل انتشار:

پانزدهمین همایش سراسری سم شناسی ایران (سال: 1398)

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خلاصه مقاله:

Cholemic nephropathy (CN) is a clinical complication associated with cholestasis and chronic liver diseases. CN could lead to renal failure and need for kidney transplantation if not appropriately managed. On the other hand, although the clinical features of CN are well described, there is no clear idea on the precise cellular and molecular mechanisms of CN. The current study was designed to evaluate kidney mitochondrial function in cholestasis-associated CN. Rats underwent bile duct ligation (BDL) surgery, and kidney mitochondria were isolated at scheduled time intervals (14, 28, and 42 days after BDL operation). Several mitochondrial indices including mitochondrial permeabilization and swelling, glutathione and ATP content, mitochondrial depolarization, and lipid peroxidation were evaluated. Renal tissue markers of oxidative stress along with tissue histopathological changes and serum biochemistry were also analyzed. Severe kidney tissue histopathological alterations including interstitial inflammation, necrosis, and Bowman capsule dilation were detected in the BDL animals. Moreover, drastic elevation in renal fibrosis and collagen deposition was detected in BDL rats. Oxidative stress markers were also significantly enhanced in the kidney tissue of BDL animals. On the other hand, it was found that mitochondrial indices of functionality were significantly deteriorated in BDL rats. These data introduce mitochondrial dysfunction and energy metabolism disturbances as a fundamental mechanism involved in the pathogenesis of bile acids-associated renal injury during cholestasis.

کلمات کلیدی:

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