

7th Global Experts Meeting on

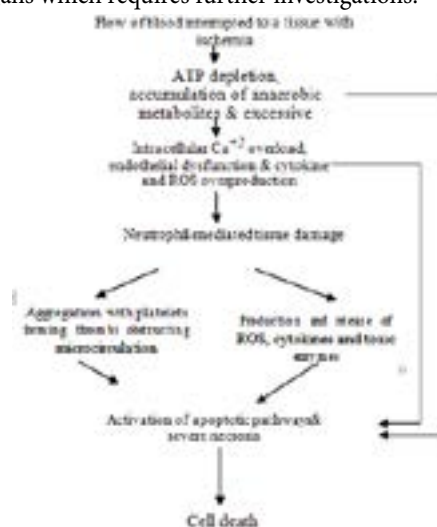
NEUROPHARMACOLOGY

July 31-August 02, 2017 | Milan, Italy

Hepatorenal protection in renal ischemia/reperfusion by *celecoxib* and *pentoxifylline*

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Renal ischemia/reperfusion (I/R) is a major clinical problem. Its pathogenesis is multifactorial involving oxidative stress, cytokine overproduction, and inflammatory responses in the kidney and remote organs. This study was performed to evaluate the effects of *celecoxib* (CEB) and *pentoxifylline* (PTX) on kidney and liver changes after renal I/R in rats. Renal ischemia was induced by clamping renal pedicles for 1h followed by reperfusion for another 1 h. The rats were assigned to five groups: sham control, untreated I/R, CEB + I/R, PTX + I/R, and (CEB + PTX)+I/R. Drug treatment was given for 7 d before I/R. Serum and tissue biochemical and histomorphologic changes were evaluated after reperfusion. Renal I/R caused changes in kidney and liver histology with a significant reduction in the function of both organs. An increase in tumor necrosis factor-alpha, myeloperoxidase, and malondialdehyde levels with a decrease in glutathione content and superoxide dismutase activity was observed in kidney and liver tissues. Pretreatment with CEB, PTX, or CEB + PTX attenuated all these changes and the extent of improvement was similar in all drug-treated groups. Finally, this study is the first experimental work demonstrating the simultaneous nephroprotective and hepatoprotective effects of CEB and PTX after renal I/R. It seems likely that both drugs protect the kidney and liver by reducing oxidative stress, attenuating tumor necrosis factor-alpha production and inhibiting neutrophil tissue infiltration. No additive protective effects were observed in rats received the combined treatment. Thus, our results may imply a promising therapeutic approach by using CEB or PTX to protect the kidney and liver against the hazardous consequences of renal I/R. Moreover Hepatorenal ischemia may have a negative impact on the brain as one of the affected distant organs which requires further investigations.



Biography

Asmaa A Khalifa has worked as Lecturer Assistant at Pharos University at Alexandria (PUA), Egypt. She is also a PhD student at the Medical Research Institute Alexandria University. She has worked on the topic of Ischemia for more than 2 years and continues to explore this field not only in the liver and kidney but also in heart, brain and other organs throughout the body as the problem of ischemia can affect many distant organs.

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