
INTERNATIONAL MEETING ON
EDUCATION & RESEARCH IN
HEALTH SCIENCES
(IMER-HS)
ABSTRACT BOOK
3 / 5
NOVEMBER 2017
ISTANBUL, TURKEY
www.imer-hs.com
Institute of
Health Sciences

(step2.html)

Protective Effect of Riboflavin From Acute Renal Injury in A Rat Model

Betül Ayaz Adakul[1], Büşra Ertaş[1], Z. Ayça Çevikelli[2], Dilek Özbeyli[3], Feriha Ercan[4], Cansu Kandemir[4], Göksel Şener[1]

[1] Department of Pharmacology, Marmara University Faculty of Pharmacy, İstanbul, Turkey
[2] Department of Pharmacology, Trakya University Faculty of Pharmacy, Edirne, Turkey
[3] Department of Medical Pathology Techniques, Vocational School of Health Services, Marmara University, Istanbul, Turkey
[4] Department of Histology & Embryology, Marmara University School of Medicine, Istanbul, Turkey

dilekozbeyli@marmara.edu.tr

Renal ischemia reperfusion (I/R) induced acute renal failure is an important clinical case because of high level of mortality [1,2]. Antioxidants may be protect tissues from devastating effects of I/R injury. Although riboflavin (vit B2) have antioxidant properties and protective effects were discussed extensively on brain, lung, liver and heart in ischemia reperfusion injury models, it is no data about renal I/R injury model [3]. Thus, our aim was to investigate the effects of the probable protective effect of riboflavin on renal I/R injury. Rats were divided into 3 groups (n=7). Riboflavin (25 mg/kg, orally) or vehicle (distilled water) was administered for one week as pretreatment and then to induce I/R injury. Under ketamine-chlorpromazine anesthesia (100 mg/kg, 0.75 mg/kg), Wistar Rats were unilaterally nephrectomized and subjected to 45 minutes of renal pedicle occlusion followed by 6 hours of reperfusion. At the end of the experimental period animals were decapitated and kidney tissue samples were taken. I/R injury caused elevated MDA levels and MPO activities in tissues, while GSH levels were found to be diminished ($p<0.05$-0.001). On the other hand riboflavin treatment reversed all these changes ($p<0.05$). İncreased caspase-3 activity and cleaved caspase-3 protein expression ($p<0.001$) were decreased via riboflavin ($p<0.01$-0.001). Elevated 8-OHdG level which indicated that oxidative DNA damage induced by I/R ameliorated via riboflavin ($p<0.001$). Additionally histopathological results demonstrated that riboflavin have beneficial effect in I/R injury. Our results suggest that riboflavin attenuates I/R induced acute renal injury in rats through its antioxidant effects and decreases apoptosis.

1.Sehirli O. Sener E. Cetinel S. Yuksel M, Gedik N. Sener G., Clinical and Experimental Pharmacology and Physiology., 35, 249–255, 2008.
2.Xu YM., Ding GH., Huang J., Xiong Y., Exp Ther Med., 12(4), 2741-2746, 2016
3.Powers HJ., Am J Clin Nutr., 77(6):1352-60, 2003