

The Effect of β -Cryptoxanthin on Testicular Ischemia-Reperfusion Injury in a Rat Model: Evidence from Testicular Histology

Authors : Kianoush Mohammadnejad, Rahim Mohammadi, Ali Soleimanzadeh, Ali Shalizar Jalai, Farshid Sareafzadeh Rezaei

Abstract : Testicular torsion and detorsion are significant clinical issues for infertile men. Torsion of the spermatic cord is an emergency condition resulting from the rotation of the testis and epididymis around the axis of the spermatic cord. A rat testis model was used to assess the effects of β -cryptoxanthin on ischemia-reperfusion injury. Twenty healthy male Wistar rats were included and randomized into four investigational groups (n = 5): Group SHAM: In this group, midline incision of the scrotum was performed, and the testicles were taken out for 2 hours with a 720-degree rotation. Group ISCHEMIA: In this group, a midline incision of the scrotum was performed, and the testicles were taken out and underwent ischemia for 2 hours with a 720-degree rotation. Group IS/REP/Oil: In this group, a midline scrotum cut was performed the testicles were taken out, and ischemia was created for 2 hours with a 720-degree rotation and at the end of ischemia 100 μ L of corn oil (β -cryptoxanthin solvent) was injected intraperitoneally. Group IS/REP/CRPTXNTN 2.5: The same as group IS/REP/Oil as well as intraperitoneal administration of 100 μ L of β -cryptoxanthin (2.5 μ g/kg) at the end of ischemia. In all groups, the testes were returned back to the scrotum and, after 60 days, were dissected out and removed for histopathological analyses. β -cryptoxanthin at the dose of 2.5 μ g/kg significantly improved histologic indices compared to other treatment groups (p<0.05). β -cryptoxanthin could be helpful in minimizing ischemia-reperfusion injury in testicular tissue exposed to ischemia.

Keywords : beta-cryptoxanthin, testis, Ischemia-reperfusion, Intraperitoneal

Conference Title : ICASV 2024 : International Conference on Animal Sciences and Veterinary

Conference Location : Paris, France

Conference Dates : September 16-17, 2024