

# ACTIVITIES OF XANTHINE OXIDOREDUCTASE AND ANTIOXIDANT ENZYMES IN THE DIFFERENT TISSUES OF DIABETIC RATS

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Oxidative stress is an important pathogenic element in diabetic endothelial dysfunction. In this study, we investigated whether there is an increase in oxidative stress related to xanthine oxidoreductase early and later stages of diabetes in different tissues of diabetic rats. We measured the activities of xanthine oxidase (XO) and xanthine dehydrogenase (XD), antioxidant enzymes (GSH-Px, SOD, CAT) and nitrite levels control (C), early diabetic (ED) and late diabetic (LD) groups in liver, brain, heart and kidney. There were no changes SOD, CAT, XO and XD activities in ED, LD and C groups in liver. In the same tissue GSH-Px activities in LD were found lower than ED and C. Nitrite levels in ED were higher than the ED and C groups in liver.

In the brain, GSH-Px activities in ED and LD were found lower than the control group. XO activities in ED were observed to be decreased compared with C and LD. XD activities were found higher in the LD than the ED and C. Nitrite levels increased in ED. GSH-Px and SOD activities were found decreased in ED and LD compared with C in heart. There was an increase the CAT activities ED and LD in this tissue. In the LD group, XD activities were found to be increased compared with ED and C. XO activities and nitrite levels were not alter in all groups.

In the kidney, GSH-Px activities were observed to be decreased in ED and LD. CAT, XO and XD activities and nitrite levels were found to be increased in ED and LD compared with C.

Our data suggest that XO contribute the oxidative stress in kidney acute and chronic diabetic rats. This enzyme may not a source of oxidizing agents in the liver, brain and heart.