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## The *in vivo* effects of adenine-induced chronic kidney disease on some renal and hepatic function and CYP450 metabolizing enzymes

Mohammed Al Za'abi, Asem Shalaby, Priyadarsini Manoj and Badreldin H Ali Sultan Qaboos University, Oman

A denine-induced model of chronic kidney disease (CKD) is a widely used model especially in studies testing novel nephroprotective agents. We investigated the effects of adenine-induced CKD in rats on the activities of some xenobiotic metabolizing enzymes in liver and kidneys, and on some *in vivo* indicators of drug metabolism like: Pentobarbital sleeping time, and plasma concentration of theophylline 90 min post administration. CKD was induced by orally feeding adenine (0.25% w/w) for 35 days. Adenine induced all the characteristics of CKD, which was confirmed by biochemical and histological findings. Glutathione concentration and activities of some enzymes involved in its metabolism were reduced in kidneys and livers of rats with CKD. Renal CYP4501A1 activity was significantly inhibited by adenine, but other measured isoenzymes (1A2, 3A4 and 2E1) were not significantly affected. Adenine significantly prolonged pentobarbital-sleeping time and increased plasma theophylline concentration 90 min post administration. Adenine also induced a moderate degree of hepatic damages as indicated histologically and by significant elevations in some plasma enzymes. The results suggested that adenine-induced CKD is associated with significant in vivo inhibitory activities on some drug-metabolizing enzymes, with most of the effect on the kidneys rather than the liver.

zaabi@squ.edu.om

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