

Hepatic and renal toxicity of cadmium in protein malnourished rats

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To evaluate cadmium toxicity (50 ppm in drinking water) in protein malnourished (8%) and normal protein (21%) diet groups, behavioral and biochemical estimations were carried out. Cd exposure led to marked elevation in alkaline phosphatase, acid phosphatase, glutamic pyruvic transferase, glutamic oxaloacetic acid transferase with significant increase in protein malnourished group ($p < 0.005$). Same trend of results was noted in urinary concentration of alpha amino acid, albumin, total protein and glucose. Results were more significant ($p < 0.001$) in malnourished animals. However, hepatic and renal enzymes showed depletion in all groups. There was marked increase in serum enzymes GOT, GPT, alkaline phosphatase and acid phosphatase in low protein diet + Cd group ($p < 0.001$). In behavioral studies, a significant delay was noted in cliff aversion, swimming behavior, ascending wire mesh and beam balance ability in Cd exposed dams of both diet groups with more marked effect in malnourished group. The present findings demonstrate the vulnerability for toxic effects of Cd exposure under protein malnourishment.

Biography

Syed Saleem Husain is an Assistant Professor in Medical Chemistry Division, Faculty of Applied Medical Sciences, Jazan University, Jazan, Saudi Arabia. He completed his Ph.D. from Industrial Toxicology Research Center, Lucknow, India, as a research fellow, in a project on neurobehavioral toxicity of cadmium in relation to protein malnutrition, sponsored by Indian Council of Medical Research, New Delhi, India. He has published a book entitled, 'Chemical Studies on Toxic Effects of Cadmium', published by Lambert Academic Publishing, Germany. He is a reviewer of refereed journals and researcher in the field of heavy metal toxicology.

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