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Single or combined cadmium and aluminum intoxication of mice liver and kidney with possible effect of zinc**Ahmed S Ibraheem, Amin A Seleem, Mohamed F El-Sayed and Heba A Khalil**
Sohag University, Egypt

In this study, we planned to test toxic effects of cadmium, aluminum either alone or combined with each other on sensitive organs as kidney and liver. The cadmium alone decreased the animal's body weight. Meanwhile, aluminum did not affect the changes in body weight of cadmium treated animals; adding the zinc significantly reduced the loss of body weight. Serum creatinine and urea were significantly lower in treated group than in control group. Cadmium and aluminum or combination of them resulted in a significant increase in serum GPT and GOT activity. Zinc did not prevent the changes caused by aluminum, however, the changes resulted by cadmium intoxication were almost healed or ameliorated by zinc. Treating with Zn alone resulted in drastic effects on kidney tissues more than either cadmium or aluminum. Treating with cadmium or aluminum resulted in infiltration of the liver parenchyma with lymphocytes, fibrosis, micro vesicular steatosis of the hepatocytes for both and appearance of many phagocytic cells, pyknotic cells and vacuolation for cadmium. Combined cadmium and aluminum treatment resulted in less damage than cadmium alone with exception of fatty degeneration. Unexpectedly, zinc induced acute cells exhibited vacuolation and steatosis. Cadmium and aluminum combined together did not worsen the situation as expected but was less damaging than cadmium alone, which suggests a possible synergistic effect of combination. Meanwhile, zinc failed to protect kidney from aluminum intoxication, which strengthens the suggestion of two different pathways of cadmium and aluminum intoxication. This finding meant that cadmium is more hepatotoxic than aluminum.

Biography

Ahmed S Ibraheem has obtained his PhD from Virginia Commonwealth University in 2004 and then moved to Sohag University Egypt. Later, he temporarily started working at Hail University, KSA. The field of specialization for him is Immunology with special focus on Autoimmunity.

asibraheem@yahoo.com

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