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The effect of mercury in iron metabolism in rats

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Chelation therapy has a long history of use in clinical toxicology to remove heavy metals toxicity from the body. The present research aimed to investigate the potential efficiency of deferasirox and deferiprone in removing mercury after its administration for 60 days following two dose levels of 40 mg Hg^{2+}/kg body weight (low dose drinking of mercury) and 80 mg Hg^{2+}/kg body weight (High dose drinking of mercury) to male Wistar rats every day. After mercury administration, some abnormal clinical signs were observed in animals. Also after acute exposure of rats to mercury, decreased plasma concentration of iron, therefore it can cause iron deficiency anemia. Our results showed that the effect of mercury on hematological indices was statistically significant and confirmed the iron deficiency anemia in rats. Combination therapy with deferasirox and deferiprone shows that the mercury level present in blood serum was significantly reduced and simultaneously, iron concentrations returned to the normal level and the symptoms of toxicity also were reduced. Also iron deficiency anemia that caused by mercury administration is obviated.

Biography

Amir Shokooh Saljooghi has completed his Ph.D. at the age of 28 years from Tehran University. He is Professor of Chemistry at the Ferdowsi University of Mashhad. He has published more than 30 papers in reputed journals and his research activities span the fields of bio-inorganic chemistry, heavy metal toxicity, DNA interaction and chelation therapy.

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