Glucose and Lipid Profile and Markers of Oxidative Stress in Diabetic Rats Submitted to Iron Overload.

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Iron is a ?rst-line prooxidant. It contributes to regulate the clinical manifestations of numerous systemic diseases, including diabetes and atherosclerosis. Increasingly, data show that iron influences glucose metabolism, even in the absence of signi?cant iron overload. Cell oxidative stress regulated by iron can explain, at least in part, its close association with abnormalities in diabetes. This study aimed to assess the interaction between diabetes and iron on biochemical parameters (serum lipid and glicemic profile and oxidative stress). Four groups of 8 male rats were fed *ad libitum* for 4 weeks the following diets: Control group (C) was fed the standard diet AIN-93 (soy oil: 8%), CI group was fed the standard diet and dextran iron injections (dextran iron 100g Fe^{2+}/L), Diabetic group (D) was fed with standard diet and streptozotocin (35mg/kg), and DI group was fed the standard diet, dextran iron injections (dextran iron 100g Fe^{2+}/L) and streptozotocin (35mg/kg). Streptozotocin injections were administrated in the beginning of the experiment and iron injections were given every 5 days, totaling 5 injections. Iron and diabetes interaction caused an increase in serum iron and total iron-binding capacity levels, altering iron homeostase. This same association increased triacylglycerols and liver glutathione levels ($P < 0.05$). These results show that the animal model used presented interactions between the two treatments and will allow the understanding of the mechanisms that regulate this interaction, what can contribute to improve the management of diabetes and to anticipate its possible complications.

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