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The Effect of Zinc Deficiency on Zinc Status, Carbohydrate Metabolism and Progesterone Level  
in Pregnant Rats

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**Abstract:** Aim: Our aim was to investigate the effect of low dietary zinc intake in late gestation on zinc status, transaminases and alkaline phosphatase activities, carbohydrate metabolism and progesterone level in albino (Wistar) rats. Materials and Methods: Eight-week-old female pregnant and non-pregnant albino (Wistar) rats were fed with diets containing either adequate (54 mg/kg) or low zinc (1 mg/kg) quantities for 18 days. Food intakes and body weight gain were recorded regularly. On day 19, after an overnight fast, blood samples were collected and animals dissected. Femur, pancreas, placenta and fetuses were removed. Concentrations of glucose, cholesterol, and urea; transaminases and alkaline phosphatase activities; and progesterone level in serum and zinc amount in femur, pancreas, placenta and fetus were determined, respectively. Results: The consumption of the low-zinc diet had an effect on animal characteristics and zinc status as indicated by the growth rate, food intake and femur, pancreas, placenta and fetus zinc concentrations. Dietary zinc intake also significantly altered glucose, cholesterol, urea, and progesterone concentrations and GOT, GPT and alkaline phosphatase activities of pregnant rats compared to their control counterparts. Conclusions: These data revealed that reduction of zinc in the diet during pregnancy affected growth rate, food intake, fetus development, zinc status, carbohydrate metabolism and progesterone concentration, and caused disturbance in transaminases and alkaline phosphatase enzyme activities.

**Key Words:** Zinc, pregnancy, transaminases, carbohydrate, progesterone, alkaline phosphatase

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