



## Study of increase in glycosylated hemoglobin and total cholesterol effects in induced diabetes mellitus by streptozotocin on mice sperm fertility factors

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**Introduction:** diabetes mellitus is one the most important agent that decline fertility in men. Aim of this study is checking effects of changes in glycosylated hemoglobin as a diabetes mellitus indicator and total cholesterol as disorders of lipids metabolism indicator on sperm fertility factors such as total move, moving forward, examination of cell membrane operation and sperm concentration in posterior epididim of rats.

**Methods:** rats were divided into two groups; diabetic and control. Diabetes induced by injection of 200 mg/kg STZ subcutaneously and after a week Diabetic group has demonstrated blood sugar level more than 350 mg. the control group just receive distilled water and the blood sugar level in this group was less than 250 mg. two weeks later than diabetes confirmation, both groups were Slaughtered. HbA1c and total cholesterol was measured by chemical methods and related factors to sperm in posterior epididymis evaluated.

**Results:** significant increase in HbA1c percentage and total cholesterol concentration in diabetic group toward control group was seen ( $p < 0.05$ ). total move, moving forward and examination of cell membrane operation in diabetic group indicate significant decrease toward control group ( $p < 0.05$ ).

**Conclusion:** This study showed that a significant change in concentrations of diabetes and lipid metabolism index and due to that sperm concentration changes too. Reduction In sperm concentration can cause decrease in fertility. Also, significant reverse relation between HbA1c and sperm concentration in diabetic group was been. This reduction in concentration, maybe occur through endocrine system and decline in testosterone secretion.

**Keywords:** diabetes mellitus, streptozotocine, glycosylated hemoglobin, cholesterol, sperm