

ABSTRACT

Ovarian functions are governed by co-ordinate actions of hypothalamus-pituitary-gonadal axis. The changes in ovarian function could be related to the malfunctioning at Hypothalamic Pituitary axis or at target gonadal organ itself, which is due to continuous exposure of external factors; including diet and pollutants. It is proposed that the net effect of such environmental exposure could result in insulin resistance leading to ovarian dysfunction. With the above view, the aim of our present study was to evaluate the ovarian function in continuous fructose exposed rat model and implication of the gonadal function with a co-exposure of cadmium. The experiments were designed to evaluate the probable serum parameters for insulin resistance as well as changes at the ovarian level. Result from current study indicates a significant change in body weight and ovarian weight in those animals that are exposed to fructose as well as co-exposed to cadmium. All groups manifested intolerance to glucose but lipid parameters (triglycerides. Total cholesterol) maximally changed in fructose treated group. Probable ovarian dysfunction was manifested by change in key-steroidogenic enzyme activity and granulose cells in cadmium co-exposed fructose treated rats. Together our results project that the animals that are continuously exposed to fructose as well as environment pollutant like cadmium can have greater risk of developing ovarian dysfunction along with insulin resistance. Thus this study implicates the importance of diet induced reproductive dysfunction in today's world.