

ESTRADIOL LEVELS AND THEIR ASSOCIATION WITH TYPE 2 DIABETES IN NORTH INDIAN MEN AND WOMEN

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ABSTRACT

Objective: To study estradiol serum levels and their effects in north Indian men and women having Type 2 Diabetes.

Research Design and Methods: For the analyses, (n=200) subjects including (n=94) males and (n=106) females, out of which 100 diagnosed cases and 100 age and sex matched healthy controls were studied. Only diagnosed cases of diabetes type 2 (50 men and 50 women) aged 45–75 years undergoing glucose profile testing in outdoor clinics in the hospital PGIMS, Rohtak (2011-2013) were included following a detailed protocol. Patients with acute complications like coma and acidosis, pregnant women, postmenopausal women on hormone replacement therapy, use of steroids since past six months, type 1 diabetes were excluded. Early morning fasting samples were collected and serum analysed for testosterone, estrogen, fasting blood glucose and HbA1c. Serum estrogen (normal in males- 10-36 pg/ml, females-Premenopausal: 13-191 pg/ml, Postmenopausal: 11-65 pg/ml) and HbA1c levels (normal=4-5.6% in normal people, <6.5% -target for control in diabetics) were measured on Auto analyser via Immunoassay Kits. The results were analysed and compared.

Results: Overall analysis showed that diabetic men and women had raised HbA1c as compared to controls (25.00±16.99) ng/dL (p<0.001) . Diabetic Women had mean estradiol levels (47.00 ±53.36) pg/ml lower as compared to control females (69.31±57.51) pg/ml, (p <0.05), also they negatively correlated with HbA1c. Men showed no significant difference in estradiol levels in diseased and controls and showed no correlation between estradiol and HbA1c levels.

Conclusions: In North India -Diabetes type 2 is associated with low estradiol levels in Females, which in turn is associated with poor glycemic control in Diabetes type 2. Such associations suggest possible clinical applications of estradiol levels in potentially adding prospective risk information. More prospective studies are needed to better define risk levels.

KEYWORDS: Estradiol Levels and Their Association