Estrogen acts directly on beta cells to increase insulin production in pancreatic cells to adapt to higher insulin demands associated with some conditions, like pregnancy and obesity. The association between estrogen or postmenopausal estrogen levels and glycaemia, insulin level, and risk of Type 2 diabetes is not clear. We investigate the relationships between estrogen and insulin levels in women with different ages. These patients are in follow-up in our endocrin out-patients clinics. Some characteristics of the study group (mean±SD): Age(years): 41±14, BMI (kg/m²): 33.5±7.55, WHR (Waist/Hip Ratio): 0.85±0.06, Waist circumference (cm): 99.45±15.3, Systolic BP (mm Hg): 130.04±20.11, Diastolic BP (mm Hg): 79.02±9.12, Insulin (mU/ml): 11.51±1.15, C-peptide (ng/dl): 2.88±1.15, HbA1c (%): 5.77±1.35, LDL-cholesterol (mg/dl): 154.25±60.7, HDL-cholesterol (mg/dl): 45.67±11.03, Triglyceride (mg/dl): 147±94.2, Estradiol (pg/ml): 35.1±44.06, Total testosterone (ng/dl): 0.18±0.13, Cortisol (mg/dl): 13.7±6.28. Results: When we divided the patients into two groups according to age 45 and > 45 years old, blood estrogen, DHEAS, testosterone, and prolactine levels diminished with age, but systolic and diastolic blood pressures, LDL-cholesterol and TSH levels increased with age. When we divided the patients into two groups according to estrogen levels of 35 and > 35 pg/ml, blood estrogen, DHEAS, insulin, testosterone levels increased with high estrogen levels, but low estrogen levels were with advanced ages, increased systolic and diastolic blood pressures. And the other hand BMI, WHR and cortisol were not changed with age and estrogen levels. Conclusion: The effect of estrogen levels in women on insulin resistance may be favorable.