SERUM PROGESTERONE, TSH AND OXIDANT STRESS IN SUBFERTILE WOMEN

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With the contemporary practices and development in science studies have steered to a postulation that oxidative stress affects female fertility in a destructive manner. Progesterone is crucial for maintaining a favorable endometrial environment for pregnancy; nevertheless, presumed to be lower in concentration among subfertile women than seen in healthy women. Thyroid function also affects fertility. This study primarily serves as a basis for understanding the progesterone concentration, thyroid dysfunction and oxidant stress in subfertile women.

Enzyme Linked Immunosorbent Assay (ELIZA) was performed using Progesterone ELIZA kit by Diagnostic Automation to estimate serum progesterone concentration. Thyroid stimulating hormone (TSH) was estimated using RIA-gnost® hTSH kit produced by Cisbio Bioassays. For measuring serum total antioxidant capacity (TAC) the ferric reducing antioxidant power (FRAP) assay was used. Free protein thiols were assessed using the DTNB-Thiols assay, which measures sulfhydryl groups with the thiol reagent 5-5-dithiobis [2-nitrobenzoic acid] (DTNB). Arylesterase activity was measured through the rate of formation of phenol by monitoring the increase in absorbance at 270 nm at 25 °C

The percentage of subfertile women having mid-luteal progesterone concentrations below 15 ng/mL, accounting for anovulation and weak ovulation, was 80.6%. The mean serum mid-luteal progesterone of the study group was 8.9 ng/mL (SD = 7 ng/mL). During this study it was also noted that the number of subjects in ovulatory class does not drop significantly, after the age of 35 years and therefore older women must also be encouraged not to give up hopes in making children. TSH measurement results indicated 20% mean incidence of subclinical-hypothyroidism. The mean serum TSH concentration in euthyroid-subfertile women and

hypothyroid-subfertile subjects were 2.3 μIU/mL (SD = 0.8 μIU/mL) and 6.4 μIU/mL (SD = 1.8 μIU/mL) respectively. Therefore carrying out TSH measurement along with mid-luteal progesterone test must be advised in subfertility clinics.

The mean TAC, free protein thiol concentration and arylesterase activity in serum of subfertile women were 716.1 μmol/L (152.8 μmol/L), 473.5 μmol/L (122.2 μmol/L) and 138.4 kU/L (38.3 kU/L) respectively. Nonetheless, significant relationships were not observed between mid-luteal progesterone and TSH, TAC, free protein thiols and arylesterase activity. And the observed variations of TAC, free protein thiols and arylesterase activity among ovulatory classes were also not significant. TSH and TAC, free protein thiols or arylesterase activity also did not show significant relationships. There was a positive correlation between TAC and arylesterase. As quite a surprise from available literature this study exposed less oxidant stress in anovulatory women and in hypothyroid subjects.