Serum Leptin, Ghrelin and Insulin Resistance in Iraqi Women with Clomiphene Resistance Polycystic Ovary Syndrome

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Abstract

Background: Polycystic ovary syndrome is the most common endocrine disorder in women with reproductive age. it has a multifactorial etiology characterized by menstrual irregularities, manifesting as oligomenorrhea or amenorrhea, apart from abnormalities of hyperandrogenism and polycystic ovaries. Recent evidence has demonstrated the complex function of adipose tissue and stomach as endocrine organs through release of hormones into the blood stream involved in physiological activities of the body with potential implication in PCOS development. One of the most mportant of these hormones are ghrelin, leptin and insulin that have role in process of PCOS development. Aims of the study: The aim of present study to evaluate serum ghrelin, leptin and insulin resistance in clomiphene resistance PCOS women and to find correlation between these parameters. Material and method: During Sep 2013 to May 2014, already diagnosed infertile Iraqi women with PCOS they are recruited in the private medical clinic of Dr. Ahlam ali naser during their periodic visit. There were 23girls at mean age 21.3±1.2 on clomiphene therapy as clomiphene resistant PCOS group(CR-PCOS), 25 PCOS girls at

mean age 23.5±1.4 consumed drugs other than clomiphene for PCOS treatment consider as (OT-PCOS) and 20 girls at mean age 22±2.4 as control group included in the present study. Blood samples were taken after at least 8 hours of fasting in all PCOS girls and control, serum glucose, ghrelin and leptin were measure, insulin resistance value were calculated using HOMA-IR model. Results: The highest Ghrelin, leptin and IR levels were observed in CR-PCOS group and this level considered significantly high when compared with control and OT-PCOS groups. The only significant positive correlation between IR and ghrelin was observed in CR-PCOS group with no significant correlation in all study groups were observed. In other hand when we make correlation between ghrelin and study parameters, significant negative correlations that observed with leptin in control group not observed in CR-PCOS and OT-PCOS, meanwhile no significant correlation between ghrelin and leptin or IR in OT-PCOS group. Conclusions: Women with clomiphene resistance PCOS exhibit significantly increased serum ghrelin, leptin and insulin resistance levels than control subjects and PCOS women taking therapy other than clomiphene indicating good biochemical markers in detection clomiphene resistance status in PCOS women. Furthermore we speculate significant positive correlation between ghrelin and IR in CR-PCOS group. Recommendation: Assessment of ghrelin and leptin levels in women taking metformin and clomiphene combination therapy for PCOS treatment Keywords: PCOS, Ghrelin, Leptin, Clomiphene resistance, Insulin resistance