9th Yazd International Congress and Student Award on Reproductive Medicine with 4th Congress of Reproductive Genetics

Key Lectures

K-64
Genetics and pharmacogenetics aspects of PCOS

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The aim of treatment of polycystic ovarian syndrome (PCOS) is restoring the ovulation; due to PCOS is the most common cause of anovulatory infertility and the most prevalent endocrine disorder in reproductive age women (5-20%) with the main symptoms including oligomenorrhea/anovulation, clinical and/or biochemical hyperandrogenism and polycystic ovaries. PCOS is a multifactorial disease including hormonal, genetic, environmental and immunological factors. Alteration in genetic factors can be related to etiology of disease are most related to its symptoms. These genes are estradiol biosynthesis genes (CYP19 or Aromatase); gonadotropin-releasing hormone, follicle-stimulating hormone receptor, luteinizing hormone, anti-müllerian hormone; and transforming growth factor beta gene family.

Commonly applied treatments in PCOS consist of clomiphene citrate, aromatase inhibitors and recombinant follicle-stimulating hormone to make ovulation induction, however outcomes of this treatment are often unpredictable. In some cases, patients are resistance to treatment. Therefore, an era of predicting drug response on the basis of one's genome is drawing close to reality, entitled pharmacogenomics needs to be studied. We aimed to summarize the way in which genetic variability might modify effects of drug-metabolizing enzymes, transporters and receptors, thereby altering response to drugs used in ovulation induction in PCOS patients. For example CYP2D6 is responsible for CC metabolism and is mostly expressed in liver.