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

Key Lectures

K-2
Potential novel treatments in polycystic ovary syndrome

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Polycystic ovary syndrome (PCOS) is a common and complex endocrine disorder, which is characterized by the presence of defining reproductive and endocrine defects. PCOS patients also suffer from metabolic features, including obesity, insulin resistance, liver steatosis, and an increased risk of type 2 diabetes. Despite the recent advances in our understanding of the underlying factors involved in the development of PCOS, the exact cause of the syndrome is still obscure. Hence, there is no cure for this condition and the current management strategies are limited to symptomatic treatment options. However, during the past decade, several novel therapeutic agents with a more mechanistic approach have displayed promising results in ameliorating defining PCOS traits. For instance, the administration of resveratrol, a sirtuin 1 activator, in a randomized controlled trial was able to reduce serum androgen levels and decreased insulin resistance in PCOS patients. Precursors of NAD^+, which in turn can induce the activity of sirtuin 1 have also shown promising results in experimental models of PCOS by reversing both metabolic and reproductive features of PCOS. More recently, specific agents have been developed to target kisspeptin, neurokinin B, and dynorphin system, which is suggested to be one of the main role players in the pathophysiology of PCOS. Such experiments have demonstrated the amelioration of PCOS-like traits in animal models of PCOS following the treatment with agents that target the kisspeptin, neurokinin B, and dynorphin system. Additionally, the administration of a number of supplementations has been evaluated in several clinical and experimental studies. Coenzyme Q10, bioflavonoids, N-acetyl-L-cysteine, and berberine with antioxidant properties and melatonin as a key regulator of circadian rhythm have been displayed positive impacts on the clinical and experimental features of PCOS. However, further investigation is still required in order to evaluate and validate the efficacy of such novel therapeutic agents in the management of PCOS.