



دانشگاه علوم پزشکی شهید بهشتی

The role of supplementation of melatonin in oocyte quality in patient women with PCOS

1-Allahveisi Azra, Ph.D of Reproductive Biology , Infertility Center Of Beassat Hospital, Faculty of medicine, Kurdistan University Of Medical Sciences, Sanandaj, Iran.

2-Rezaei Mohammad Jaffar, Ph.D of histology and embryology , Infertility Center Of Beassat Hospital, Faculty of medicine, Kurdistan University Of Medical Sciences, Sanandaj, Iran.

3- Nikkoo Bahram, Associated Professor, Department of Pathology , Faculty of medicine, Kurdistan University Of Medical Sciences, Sanandaj, Iran

Introduction: Polycystic ovary syndrome is the most common endocrinology disease in reproductive-aged women. it's characterized by an increased production of androgens and estrogens. Endocrine and metabolic abnormalities associated with this syndrome may also be related to the default of oocyte development competence. Melatonin primarily produced via the pineal gland, which regulates a variety of important central and peripheral actions related to circadian rhythms and reproduction. It is showed that intrafollicular melatonin concentration was significantly lower in PCOS patients than those in women undergoing ICSI/ IVF protocol, possibly because of the anovulation and poor oocyte quality seen in PCOS .

Materials and methods: This review, we briefly discuss about the role of supplementation of melatonin in oocyte quality in patient women with PCOS

Results:our studies showed that the addition of melatonin to the maturation medium appears to have positive effects on the clinical outcomes of human immature oocytes derived from antral follicles. Moreover, melatonin impacted on the oocytes and subsequent clinical outcomes of patient women with PCOS. It is suggesting that melatonin may increase cytoplasmic maturation and early embryonic development by improving IVM conditions. Also , melatonin binds to its receptor directly and regulates progesterone production as well as LH receptor gene expression and gonadotrophin-releasing hormone receptor gene expression in human granulosa-lutein cells via the mitogen-activated protein kinase pathway and activation of Elk-1.therefore, It seems that the advantageous effects of melatonin occur by its antioxidant functions against oxidative stress and related damage

Conclusion: Melatonin may cause increases oocyte maturation by binding to its receptor and improving culture mediums with direct elimination of free radicals.

Key word:PCOS, Melatonin, Oocyte quality