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**PSYCHIATRIC CO-MORBIDITIES ASSOCIATED WITH PCOS**

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Polycystic ovarian syndrome (PCOS) is a common endocrine disorder, affecting 6–10% of reproductive age women and influences the reproductive, metabolic, dermatologic, and psychiatric health of affected girls and women. Despite its prevalence, the pathogenesis of the disease is largely unknown, and treatment options are limited. Thus, PCOS has been a ripe area for research in recent years, and novel etiologic pathways, diagnostic parameters, and treatment options are being explored. This study focuses on recent data suggesting pathogenic, environmental influence and psychiatric considerations, and sequelae of PCOS. Hypothalamic-pituitary-gonad dysfunction is thought to be the primary cause of PCOS. Gonadotropin-releasing hormone (GnRH) is pulse-released in the hypothalamus under typical circumstances. Increased frequency of release encourages luteinizing hormone (LH) to be released from the anterior pituitary gland, frequency encourages the production of follicle stimulating hormone (FSH). While Exposure to endocrine-disrupting chemicals in utero or at other critical developmental periods have been hypothesized to contribute to PCOS. A “two-hit” hypothesis of genetic and environmental exposures has been suggested. Levels of bisphenol A (BPA) are higher in adolescents and women with PCOS than controls, even after controlling for obesity, and correlate to testosterone levels. BPA levels were also negatively correlated with antral follicle count, a marker of ovarian reserve. According to the review of the data higher levels of perfluorinated compounds and lower levels of phthalate metabolites in serum and urine of PCOS women were found.

Final composition of review of combined studies states that in the past several years, the high rate of mood disorders in women with PCOS has come to light, studies have shown increased rates of anxiety and depression when matched for BMI, though data in teens remains very limited but they often have maladaptive coping behavior associated with depression and anxiety symptoms.

It was also found that reduced health related QOL (quality of life) was predicted by self-esteem, body image, and sexual function in a cohort of women with PCOS that correlated with poor sexual function.

Notably, there appears a relationship between insulin resistance and depression . Depression is associated with alteration in hypothalamic pituitary adrenal axis and decreasing monoamine neurotransmitter levels. When the body is under psychological stress there is increase in secretion of corticotropin releasing hormone and cortisol, if this stress persists the cortisol in body will remain high this in turn desensitizes receptors of serotonin and dopamine making them to decrease in the body, making it a victim of a vicious cycle. Further, pro-inflammatory cytokine concentrations rise in chronic inflammatory conditions, which are frequently linked to obesity, and exacerbate feelings of anxiety and depression. Nowadays there are plenty research that suggests a significant impact of gut microbiota imbalance, neuroendocrine and neurotransmitter disorders in the pathogenesis of mental illnesses accompanying PCOS.

In conclusion, taking in consideration the high rate of co-existing mood deviations such as depression, anxiety disorders, and eating disorders, it is imperative that PCOS patients should be evaluated for screening of symptoms of mood disease. It might be crucial to improve the results of treatment of PCOS.