

Polycystic Ovarian Syndrome Conference

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Can gut bacteria alter gonadal function? An overview of the DOGMA theory of PCOS

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Polycystic Ovarian Syndrome (PCOS) is the commonest endocrinopathy seen in reproductive age women, presenting with a myriad of features including reproductive dysfunction (anovulation, infertility, endometrial pathology and increased risk of miscarriage and preterm delivery), hyper-androgenism (acne, hirsutism), diabetes, cardiovascular disease and psychological impairment (depression, anxiety). From a biochemical perspective PCOS is characterized by a chronic state of inflammation, which is now recognized as a potential trigger for insulin resistance and possibly many other features of the disorder. Therefore, the key to effective long term management of PCOS is to identify and treat the cause of chronic inflammation underlying the creation of a PCOS state. Recently we proposed that the passage of gut bacterial endotoxin into the circulation may be responsible for triggering chronic inflammation and PCOS- the Dysbiosis of Gut Microbiota (DOGMA) theory. Women with PCOS have a significantly greater incidence of obesity and irritable bowel syndrome (IBS), both linked with an increase in intestinal wall permeability allowing translocation of gut bacteria into the systemic circulation. The resulting endotoxin exposure (metabolic endotoxaemia) triggers a chronic low grade inflammatory state, which in turn impairs insulin sensitivity, with a compensatory hyper-insulinaemia increasing free androgen levels, while also impairing ovulation. The presence of gram negative bacteria endotoxin in the circulation has been shown to impair lipid profiles and has been linked with poor mental health. Therefore, we contend that the effective long term treatment of PCOS may be best directed at reducing metabolic endotoxaemia, rather than directly treating individual pathologies such as anovulation.

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Polycystic ovarian syndrome and recurrent pregnancy loss: Update on evidence and treatment for 2015

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Polycystic ovary syndrome (PCOS) is one of the most common hormonal disorders in women resulting in a wide range of health issues including insulin resistance, obesity, cardiovascular disease and reproductive issues. PCOS is associated with chronic anovulation and elevated androgen hormones which result in difficulty with reproduction. Women with PCOS suffer not only from difficulty conceiving but a higher rate of early miscarriage compared to women of the same age without PCOS. Women with PCOS are more likely to have multiple miscarriages and suffer from recurrent pregnancy loss (RPL), defined as 2 or more miscarriages for the purposes of evaluation by the American Society of Reproductive Medicine. The specific etiology of pregnancy loss in PCOS remains unknown. Several factors have been implicated as potential contributors to miscarriage in PCOS such as obesity, endometrial defects and hormonal imbalances and we will review the current evidence.

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