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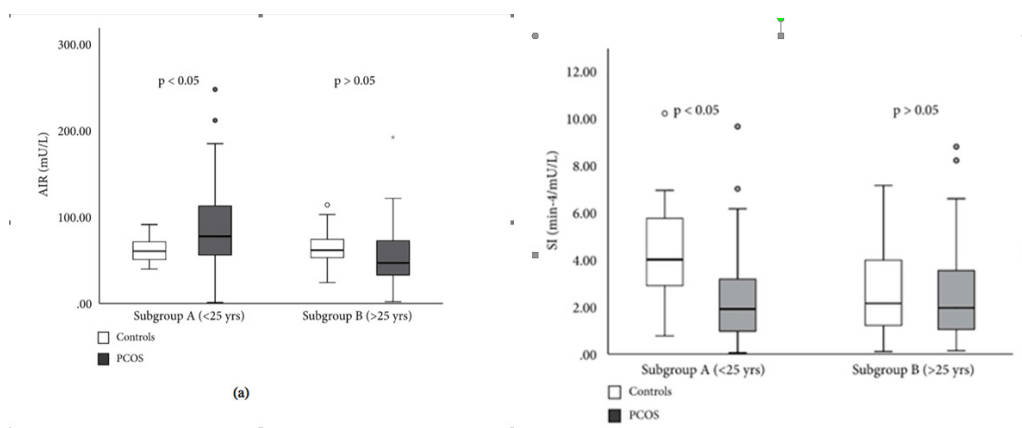
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Treatment of PCOS: Insulin Resistance in Focus

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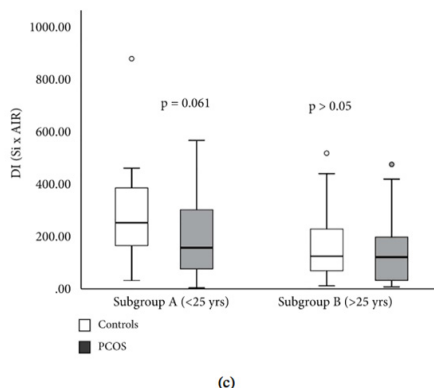
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Polycystic Ovary Syndrome (PCOS) is one of the most common endocrinopathy in women of reproductive age. Insulin resistance is a coexisting feature of this disorder in many with PCOS, but its role in the pathogenesis of PCOS is unclear. Even if insulin resistance is not one of the diagnostic criteria, it is one of the main targets of PCOS therapy along with oral contraceptives. In addition to insulin resistance, the associated failure of pancreatic β -cell function may be an important determinant of impaired glucose tolerance or Type 2 Diabetes (T2DM). The disorder is thought to begin with menarche and some features change with age. Some studies have suggested that adolescents with PCOS are severely insulin resistant, compared to a control group matched for body composition and abdominal obesity. Middle-aged women with PCOS have been noted to have an increased prevalence of T2DM compared to age-matched controls. Our recent data on subjects younger than 25 years emphasize the importance of diagnosing PCOS in adolescence and instituting appropriate therapy targeting insulin resistance and β -cell secretion before T2DM develops (ref 1). Among all insulin sensitizers, metformin is the most widely used in PCOS. The beneficial effects of metformin are increasingly evident, especially when combined with lifestyle modifications, improvement of pathogenetic mechanisms underlying PCOS, restoration of ovarian function and improvement of metabolic profile, especially insulin sensitivity and lipoprotein pattern. Metformin can improve the inflammatory condition both indirectly by improving metabolic parameters and directly through its anti-inflammatory effect. Several recent studies have reported the beneficial effects of inositol in improving the metabolic and hyperandrogenic profile of women with PCOS. Recent studies have also evaluated the effects of other antidiabetic drugs, such as incretin mimetics and SGLT2s, which may possibly be more effective in some comorbidities, such as obesity and cardiovascular disease.



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Recent publications

1. Sumarac-Dumanovic M et al. (2022). Age, Body Mass Index and Waist-to-Hip Ratio Related Changes in Insulin Secretion and Insulin Sensitivity in Women with Polycystic Ovary Syndrome: Minimal Model Analyses. *Int J Endocrinol* 18; 2022:6630498.
2. Dragović G, Sumarac-Dumanovic M et al. (2018). Correlation between PAI-1, leptin and ferritin with HOMA in HIV/AIDS patients. *Exp Mol Pathol.* 2018 Aug;105(1):115-119.
3. Sumarac-Dumanovic M et al. (2017). Downregulation of autophagy gene expression in endometria from women with polycystic ovary syndrome. *Mol Cell Endocrinol* 15; 440:116-124.
4. Sumarac-Dumanovic M et al. (2013). Therapeutic improvement of glucoregulation in newly diagnosed type 2 diabetes patients is associated with a reduction of IL-17 levels. *Immunobiology.* 218(8):1113-8.
5. Sumarac-Dumanovic M et al (2008). Increased activity of interleukin-23/interleukin-17 proinflammatory axis in obese women. *Int J Obes (Lond)* 33(1):151-6.

Biography

Mirjana Sumarac-Dumanovic is a Professor of Endocrinology and Internal Medicine at the University of Belgrade School of Medicine and Head of Multidisciplinary Center for Obesity in University Clinical Center of Serbia, Clinic for Endocrinology, Diabetes and Diseases of Metabolism. From 2016 she is Full time Professor at University of Belgrade. Dr. Sumarac-Dumanovic research interests have always been focused on diabetes and in particular the physiopathology and therapy of type 2 diabetes and insulin resistance syndrome and polycystic ovary syndrome as well as in obesity. She is a member of many societies and associations including the European Society of Endocrinology, European Association for the Study of Obesity. She is secretary of Serbian Association for the Study of Obesity. She organized many meetings in field of endocrinology and obesity. Dr Sumarac-Dumanovic has published over 50 articles in international journals. She was invited lecturer in field of PCOS, diabetes, obesity.