УДК [61+615.1](06)(043.2)
ББК 5+52.81
А 43
ISBN 978-985-21-1569-8

Koorosh Rezaeyan

THE ROLE OF MYO-INOSITOL IN IMPROVING METABOLIC AND REPRODUCTIVE HEALTH IN PCOS

Tutor: PhD, associate professor Pavlukova Svetlana
Department of Obstetrics and Gynecology
Belarusian State Medical University, Minsk

Polycystic ovary syndrome (PCOS) is the most common endocrine disorder affecting women of reproductive period, marked by ovarian dysfunction, hormonal imbalances and metabolic changes (insulin resistance).

Myo-inositol (MI) and D-chiro-inositol (DCI) are two inositol stereoisomers with important roles in glucose metabolism and reproductive functions. MI, the predominant form in the human body, enhances insulin sensitivity and regulates glucose uptake, on the other hand DCI is involved in insulin signal transduction. The balance between MI and DCI is critical and very important for proper hormone regulation in PCOS.

This review aims to explore the potential effects of myo-inositol supplementation on metabolic and reproductive outcomes in women with PCOS.

Literature was retrieved from selected databases, MEDLINE, EMBASE, PubMed and Research Gate from 2010 till 2024. Thirty-one trials (n=3121; 1310 control) were included in analysis. Data were extracted for hormonal, metabolic, lipids, psychological, anthropometric, reproductive outcomes and adverse effects.

Through the investigation and research, it has been found out that myo-inositol supplementation improves insulin sensitivity, glucose tolerance, and menstrual regularity in women with PCOS. Combined with DCI, myo-inositol has shown to enhance ovulation rates and fertility in women with PCOS, indicating a potential treatment option for reproductive health improvement.

Nevertheless, the co-administration of myo-inositol with metformin, a common medication for insulin resistance, may have synergistic effects on metabolic and reproductive outcomes in PCOS which is quite remarkable. The combination therapy could enhance insulin sensitivity, up regulate menstrual cycles, activates ovulation, and improve fertility in women with PCOS.

An important note to remember, myo-inositol supplementation during pregnancy in women with PCOS has shown promising effects on gestational results, including a decreased risk of gestational diabetes and improved vascular integrity. These findings mark the potential of myo-inositol to support metabolic and reproductive health during pregnancy, underscoring the importance of discussing its use with healthcare providers.

Myo-inositol holds up a therapeutic potential in managing metabolic and reproductive aspects of PCOS. Future research efforts should focus on demonstration of the mechanisms underlying its effects and improving treatment strategies for better outcomes in women with PCOS.