Article Review: The Women with PCOS Syndrome and Probiotic Supplements Effects

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ABSTRACT
PCOS syndrome is major compatible female problem for this mini review was focus on the research which are tested the effect of probiotic supplement on PCOS.

Methods: In this mini review the was key word such as (PCOS, obesity, lipid profile, testosterone) and used Google scholar and pub med. The study was used 7 article published between (2015-2019).

Results: The study was positive result about effect of probiotic on the body weight, lipid profile, sex hormone and oxidative factors. the study was showed more relationship between the 7 articles which are used in this study.

Conclusion: This review was showed probiotic positive function on PCOS treatment in the women.

Keywords- PCOS, obesity, lipid profile, testosterone

I. INTRODUCTION

Syndrome of ovarian being polycystic (PCOS) is considered as diseases mostly prevalent being endocrine influencing women by 5-10 % which are classified in age of reproduction [1]. Stein and Leventhal et al., (1935) identified PCOS. PCOS mainly caused androgen elevated action [2]. However, more study was hyperandrogenism isn’t the main caused of PCOS and depending on concept of Rotterdam, PCOS can be defined via at least 2 out of 3 incidence of circumstances: polycystic ovaries, ultrasonic hyperandrogenism, and chronic anovulation [3]. PCOS patients are suffering from complications being multiple which include hyperinsulinemia, infertility, menstrual dysfunction, glucose resistance, type 2 diabetes, obesity, hirsutism, metabolic syndrome, puberty, heightened likelihood of cardiovascular disease development, endometrial cancer, hypertension, disorders of lipid profile and obstructive sleep apnea [4].

While literature includes detailed research, because of poorly understood associations between genetic and environmental factors [5] the cause of PCOS remains uncertain. Among PCOS causes may be reproductive neuroendocrine anomalies, pathological reproductive steroidogenesis, insulin resistance (IR), and elevated adrenal hyperandrogenism due to cortisol [6]. Latest reports mention that IR is linked to reproductive and metabolic conditions. Thus, IR plays a vital function in PCOS pathogenesis [7]. Insulin induces the development of androgen in luteinizing hormone (LH) in theca cells, and increased production of androgen contributes to acne, hirsutism, and infertility of ovulatory [2].

Feature of hyperandrogenic as associated with insulin is liver sex-synthesis inhibition binding globulin (SHBG) [8]. SHBG considered as protein of plasma for androgens and therefore declined levels of SHBG in PCOS which cause hyperandrogenism. Insulin has a vital role regulating function in glucose synthesis, avoiding lipolysis and facilitating the amino acids transportation from a metabolic perspective [9].

II. RESULTS

In the table (1). The review was explain the number of patient was used in every study, type of probiotic which used and the result was reached of every one.

In briefly
1. All study was reviewed expected 1 was given positive influence on insulin level and fasting blood sugar.
2. The review was showed increased in serum sex hormone
3. Increased in antioxidant capacity
4. Decreased in the level of testosterone hormone
5. Reduction of body weight and lipid profile
6. Reduction on the CRP (C. reactive protein) in due to reduction of inflammation.
Table 1: Explain of the number of patient, type of probiotic and result of study

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Treatment</th>
<th>Patient number</th>
<th>Reference</th>
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<tbody>
<tr>
<td>↓1. Probiotic reduced fasting blood sugar levels of serum insulin in crude model ($-0.49 \pm 0.67$ vs. $0.34 \pm 0.82 \mu IU/mL$, $P = 0.09$), ↓3. assessment-insulin homeostasis model as resistance score</td>
<td>(1) Supplements as Probiotic ($n = thirty six$), (2) placebo ($n = thirty six$) for eight weeks.</td>
<td>Seventy two PCOS women of fifteen–forty years old</td>
<td>10. Tanaz et al, 2015</td>
</tr>
<tr>
<td>↑probiotic supplementation significantly increased (SHBG) ↑ TAC of plasma decreased significantly total serum testosterone ↑ modification scores of (mF-G) ↓ (hs-CRP) ↑ plasma malondialdehyde (MDA) concentrations</td>
<td>Two groups receiving either placebo or probiotics ($n = thirty every group$) for twelve weeks.</td>
<td>sixty PCOS women of 18-40 years old were assigned randomly</td>
<td>11. Karamali et al, 2018</td>
</tr>
<tr>
<td>↓significant reduction in weight ↓BMI ↓significant decline in fasting plasma glucose ↓concentrations of serum insulin ↓serum triglycerides ↑significant elevation in sensitivity of quantitative insulin</td>
<td>receiving placebo ($n = thirty$) for twelve weeks or probiotic capsule ($n = thirty$)</td>
<td>sixty randomized PCOS women</td>
<td>12. Shahnaz et al, 2018</td>
</tr>
<tr>
<td>no significant difference in 1. fasting blood sugar 2. HbA1c 3. C-reactive protein (CRP) ↓ difference of significance was noticed in the mean apelin thirty six</td>
<td>Supplement as synbiotic ($n = forty four$), and (2) placebo ($n = forty four$) for twelve weeks</td>
<td>Randomized double-blind, eighty-eight PCOS women of nineteen–thirty-seven years.</td>
<td>13. Elham Karimi et al, 2017</td>
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<td>↓significant decline in concentrations of serum insulin ↓ assessment-insulin homeostasis model resistance ↑significant increase in sensitivity of quantitative insulin ↓significant decreases in triglycerides of serum Concentrations of VLDL-cholesterol</td>
<td>capsule containing Lactobacillus acidophilus, Lactobacillus casei and Bifidobacterium bifidum, 12-week</td>
<td>Sixty women with PCOS</td>
<td>14. Mansoorah Samimi et al, 2019</td>
</tr>
<tr>
<td>↑significantly increased (SHBG) ↑plasma (NO) ↓decreased modified Ferriman Gallwey ↓serum (hs-CRP)</td>
<td>Sixty PCOS subjects, two groups to take either synbiotic ($n = thirty$) or placebo ($n = thirty$) for twelve weeks.</td>
<td>Controlled trial of double-blind randomized placebo</td>
<td>15. Nasri et al, 2018</td>
</tr>
<tr>
<td>↓beck inventory depression ↓anxiety, depression and stress scale scores ↓testosterone ↓hirsutism</td>
<td>Sixty subjects, Eighteen–forty years. Used 50,000 IU vit. D every two weeks</td>
<td>trial clinically controlled being double-blinded, randomized, placebo</td>
<td>16. Vahidreza et al, 2019</td>
</tr>
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</table>
III. DISCUSSION

PCOS women are subjected to numerous metabolic disorders i.e., hyper androgenemia, elevated inflammation and oxidative stress. [17] Respectively, deficits in micronutrients are normal in women of childbearing age. This can in turn raise metabolic problems in PCOS patients.

We observed that probiotic administration to women of PCOS for twelve weeks led to a large increase in serum SHBG and a small decrease in total serum testosterone and scores of mFG but without influencing serum DHEAS levels relative to serum Compared with placebo [18]. But according to our experience, information on probiotic supplementation impact on profiles of hormones is minimal in PCOS women. Several reviews have assessed the probiotic supplementation effects on markers of insulin resistance among those of no PCOS. Placebo with. Information on the efficacy of probiotics though, to the best of our knowledge [19].

REFERENCES