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Effect of chlormadinone acetate, and drospirenone with oral estroprogestins on metabolic response in women with polycystic ovary syndrome: A meta-analysis of randomized clinical trails

Amr Menshawy, Ammar Ismail, Mohamed Abdel-Maboud, Alaa Alaa El-din, Fathinah Harun, Gehad El Ashal and Ahmed Elgebaly Cairo University, Egypt

Statement of the Problem: Polycystic ovary syndrome (PCOS) is a serious endocrinal disorder, characterized by hyperandrogenism, menstrual disturbances, decreased fertility, and skin manifestations. Oral estroprogestins (EPs), containing estrogen (ethinyl-estradiol, EE) with progestogen (drospirenone, DRSP) or (chlormadinone acetate, CMA), have been used to treat the symptoms PCOS. We aim to compare the effects of EE-DRSP versus EE-CMA on metabolic response and biochemical levels in women with PCOS.

Methods: A computer literature search was conducted. Records were screened for eligible studies and data were extracted and synthesized using Review Manager (version 5.3) software.

Results: Three RCTs (EE-DRSP: n=98 and EE-CMA: n=87) were pooled in the analysis. The overall effect favored EE-DRSP over EE-CMA in reducing A levels after 3 months (MD -0.63, 95% CI [-0.94, -0.32], P<0.001), FGS after 6 months (MD -0.44, 95% CI [-0.99, -0.19], P=0.0006), and total T after 3 months (MD -0.12, 95% CI [-0.23, -0.01], P=0.03). On the other hand, the pooled analysis favored EE-CMA over EE-DRSP in reducing SHBG after 3 months (MD 24.34, 95% CI [15.23, 33.44], P<0.001) and after 6 months (MD 1.89, 95% CI [1.09, 2.69], P<0.001). There was no significant difference between the two groups in total T after 6 months (MD -0.01, 95% CI [-0.04, 0.02], P=0.37), BMI after 6 months (MD -0.18, 95% CI [-0.39, 0.03], P=0.10), DHEAS after 3 months (MD -0.10, 95% CI [-0.68, 0.47], P=0.72), DHEAS after 6 months (MD -0.10, 95% CI [-0.88, 0.68], P=0.80), and FAI after 6 months (MD -0.53, 95% CI [-1.10, 0.03], P=0.06).

Conclusion: EE-DRSP showed a more potent effect than EE-CMA in reducing A and total T levels. However, further well-randomized controlled trials are needed to elucidate the difference between the two combinations.

elmenshawy1996@gmail.com