

# Inhibiting effects of Metformin on Ovarian Hyperstimulation Syndrome (OHSS) in induction of ovulation with gonadotropin in ART cycles on women with Polycystic Ovary Syndrome (PCOS)

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## Abstract

In this research, it is supposed that treatment with Metformin prior to ovulation induction with gonadotropins in ART cycles, would be able to prevent OHSS and its severity among women with PCOS. This study was a randomized clinical trial on 100 women with PCOS who were treated in ART cycles. These women were divided randomly in two groups A and B ( 50 subjects each ). Group A received 500 mg of Metformin daily for about one month before induction ovulation with HMG and continued this treatment for about 45 days . Induction of ovulation protocol (classic long protocol) were similar in both groups.

At the end of study the following results were compared in both groups : The serum Estradiol (E2) level on day of HCG administration and HMG doses (daily and total) were significantly lower in group A ( $P<0.002$  and  $P<0.001$  respectively). The number of women with OHSS and its severity and the number of admission in group A were lower than group B ( $P<0.001$  and  $P<0.02$ , respectively), but the numbers of oocyte, pregnancy and the duration of treatment with HMG were similar in both groups. These results show that Metformin by reducing resistance to insulin and hyperandrogenism, leads to reduction in E2 level and favors orderly follicular growth in response to exogenous gonadotropin and it reduces the risk and severity of OHSS.

**Keywords:** Metformin, Ovarian hyperstimulation syndrome (OHSS), Polycystic ovary syndrome (PCOS), Induction ovulation, ART.

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