

First-Line Fertility Treatment in Women with Polycystic Ovarian Syndrome

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Polycystic ovarian syndrome (PCOS) is a common disorder affecting up to 10% of reproductive age women. It is diagnosed in women with irregular menses (infrequent ovulation) along with one or more of the following findings: (1) signs of androgen hormone excess (facial hair growth, excessively oily skin or acne) (2) polycystic-appearing ovaries on ultrasound (3) increase in blood hormones called androgens (testosterone or DHEA-S). The cause of PCOS is largely unknown, but obesity and insulin resistance (resistance of the body's cells to the action of insulin) have been associated with this disorder.

First-line treatment for those with fertility problems typically has involved the use of **clomiphene citrate** (Clomid). In recent years, PCOS patients are frequently prescribed **metformin**, an insulin-sensitizing agent that lowers the body's insulin requirements. Many studies have been published comparing the effectiveness of metformin versus clomiphene citrate to induce ovulation and pregnancy, but results to date have been mixed. Some have shown a benefit, while others suggest that metformin is *less* effective than clomiphene citrate alone. There also was no clear consensus regarding the benefit of clomiphene citrate and metformin used together.

A recently published article by Jungheim and colleagues in the journal *Fertility and Sterility* compiled research data involving a large number of patients from multiple studies to determine the most optimal first-line fertility treatment in women with PCOS. Live birth rates were investigated in three types of treatment options: 1) clomiphene citrate alone 2) metformin alone 3) clomiphene citrate and metformin used together.

The results of this study suggest that combination treatment with clomiphene citrate and metformin used together resulted in a higher live birth rate compared to clomiphene citrate or metformin used alone. These results are exciting because some women who failed to conceive on clomiphene citrate or metformin alone (depending on their medical history) may have another option of combining these medicines prior to moving on to more aggressive treatments such as superovulation using injectable medications or in-vitro fertilization (IVF). The latter options are not only more costly but may also raise the risk of multiple births compared to clomiphene citrate and metformin.

At the **Center for Advanced Reproductive Medicine and Fertility**, our philosophy is to utilize less aggressive, less costly treatments first, whenever possible. Only when more gentle approaches fail do we recommend more advanced reproductive technologies. Hence, this recent study by Jungheim and colleagues opens another possible treatment option in line with our philosophy.

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