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**Induction of ovulation with clomiphene metformin & letrozole metformin in infertility women with Polycystic Ovarian Syndrome: A narrative review**

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Polycystic Ovarian Syndrome (PCOS) is a heterogenous multisystemic endocrine disorder. Ovulation induction is one of the procedures for development of follicles in anovulatory infertile women with Polycystic Ovarian Syndrome. There are different drugs which have been used widely for this condition. Clomiphene citrate was very popular ovulation stimulant in the past and letrozole has been an alternative for the same purpose in recent years. Metformin has also been used either singly or in combination with clomiphene citrate and letrozole for better results. However, no single therapeutic measure has been recommended as being effective. In this study, the efficacy of clomiphene citrate, letrozole, metformin and combination of metformin with either clomiphene citrate or letrozole have been reviewed based on the available literature. We conducted a review of existing literature from January 2006 to December 2016. Databases such as PubMed, Medline and Scopus were searched with the search item PCOS, clomiphene citrate, letrozole, metformin and infertility. Clinical trials, meta-analysis and systematic reviews were reviewed and conclusion was drawn. Study revealed clomiphene citrate as the first line of treatment for ovulation induction in Polycystic Ovarian Syndrome. Most of the studies showed that letrozole was effective in regulating ovulation and achieving pregnancy among women with Polycystic Ovarian Syndrome as compared to clomiphene citrate and is used in cases where women are resistant to clomiphene citrate. Metformin is more effective when used in combination with either clomiphene citrate or letrozole and the effectiveness is more when used in combination with letrozole as compared to clomiphene citrate. However, some studies also showed that the combination of metformin with clomiphene citrate is superior to combination of metformin with letrozole. As there is no clear evidence on which medication is the most effective in achieving pregnancy among Polycystic Ovarian Syndrome cases, more studies with large sample size or clinical trials are warranted.

### Biography

Uma Shrivastava is an Endocrinologist in Infertility and IVF Specialist. She is Founder and Executive Director of the Pioneer Institute in Infertility treatment in Infertility Centre, Nepal. She is also the Professor of Physiology and Vice-Principal at College of Biomedical Engineering and Applied Sciences. She has published more than 20 papers in journals, conference proceedings and newspapers.

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