

## Short Commentary

### A Short Commentary on “Comparison of *In Vitro* Fertilization Outcomes between Patients with and Without Polycystic Ovary Syndrome”

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Polycystic Ovary Syndrome (PCOS) is a major cause of female infertility, and its management still is a clinical focus in Assisted Reproductive Technology (ART). High ovarian response, usually lead to Ovarian Hyperstimulation Syndrome (OHSS), exerts complex effects on pregnancy outcomes. Based on the title “Comparison Of In Vitro Fertilization Outcomes Between Patients With And Without Polycystic Ovary Syndrome”, recently published by our team, clinical outcomes in high-response PCOS patients, this article provides a short commentary as follows.

#### Patient Grouping and Matching Precision Strategies

The retrospective cohort analyzed 3841 cycles and 649 matched pairs after propensity score matching (PSM), offers valuable evidence for individualized treatment of PCOS patients with high ovarian response. A key merit of this study is the rigorous application of PSM, which balanced confounding factors (age, BMI, hCG day uterus Endometrial thickness, bFSH, bLH, Gn starting dose, Gn total dose, due to that these factors, may affect pregnancy) between PCOS and Non-PCOS groups, ensuring reliable comparative results.

Notably, In a highly homogeneous cohort of patients (younger, are all adopted long follicular phase regimen, first cycle, ovarian high response), PCOS patients with high ovarian response showed significantly higher retrieved oocytes, high-quality embryo rates, high-quality blastocyst rate, clinical pregnancy rates, and live birth

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rates than Non-PCOS counterparts, without increased adverse outcomes (preterm birth, OHSS and OHSS in clinical pregnancy).

#### Counter-Intuitive Core Conclusion Was Drawn

Compared with Non-PCOS patients, PCOS patients with high ovarian response without an increased risk of OHSS did not increase, demonstrated better embryonic development potential and clinical.

The study also identified critical factors for favorable outcomes: progesterone levels on hCG trigger day (below the 1.5 ng/mL [1] threshold may no impaired endometrial receptivity) and appropriate endometrial thickness reaches 10-12mm [2] in both groups, providing important clinical references for embryo transfer timing.

#### Limitations

As a retrospective study, it is prone to selection bias: Excluding patients over 35 years old and those using non-long follicular phase regimen, restricts result generalizability. Additionally, it lacked data on glucose metabolism abnormalities, PCOS carries higher risks for abnormal glucose metabolism and abnormal glucose metabolism could influences differently embryo development and clinical pregnancy outcomes in PCOS and Non-PCOS patients with high ovarian response [3], which are essential for evaluating Offspring health.

Finally, “individualized treatment” are ambiguous. The high total embryo freezing rate (52.4%) in the PCOS group to mitigate risk of OHSS, but the specific differences between the two groups in terms of ovulation induction drug adjustment, trigger timing selection, or luteal support regimens were not elaborated, resulting in an unclear path from research findings to clinical decision-making.

#### Conclusion

This study is a high-quality clinical research with solid methods and clear conclusions. Future studies should adopt prospective designs with larger samples, include metabolic parameter assessments, and conduct long-term follow-up. In conclusion, these findings indicate that well-managed PCOS patients with high ovarian response can optimize reproductive outcomes, while more high-quality research is needed to refine ART treatment strategies.

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