

Luteal Phase Ovarian Stimulation May Improve Oocyte Retrieval and Oocyte Quality in Poor Ovarian Responders Undergoing In Vitro Fertilization: Preliminary Results from a Single-Center Prospective Pilot Study.

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ABSTRACT

INTRODUCTION: Luteal phase ovarian stimulation (LPOS) has been proven a feasible protocol for infertile patients. High progesterone level in the luteal phase could physiologically inhibit premature luteinizing hormone surge, from which poor ovarian responders (PORs) could obtain benefits. Therefore, we aimed to compare clinical outcomes between LPOS and follicular phase ovarian stimulation (FPOS) protocol in PORs undergoing in vitro fertilization (IVF).

METHODS: This prospective pilot study was performed at one tertiary center from January 2016 to October 2017. A total of 60 PORs who met Bologna criteria and undergoing IVF were enrolled. Thirty PORs were allocated to the LPOS group and 30 PORs were allocated to the FPOS group. Basic characteristics, cycle characteristics, and pregnancy outcomes were compared between the two groups.

RESULTS: The length of stimulation was significantly longer in the LPOS group than in the FPOS group. The numbers of retrieved oocytes, metaphase II oocytes, fertilized oocytes, and day-3 embryos were significantly higher in the LPOS group than in the FPOS group. Conversely, we could not find any significant difference for clinical pregnancy rate, ongoing pregnancy rate, abortion rate, and cancellation rate. The multivariate analysis showed that only LPOS ($p = 0.007$) was significantly associated the possibility to retrieve three or more oocytes, whereas basal follicle-stimulating hormone (FSH) < 8 IU/l ($p = 0.103$) and antral follicle count (AFC) ≥ 3 ($p = 0.143$) did not significantly affect this event.

CONCLUSION: LPOS allows improved oocyte retrieval and oocyte quality in PORs with respect to FPOS, despite comparable pregnancy outcomes. LPOS may be considered a feasible option for oocytes accumulation in PORs.

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