

## Abstract

**Background:** Poor ovarian responders (POR) women represent a challenge issue in assisted reproduction techniques (ART). As an effort to optimize conception rates in these patients, ovarian platelet-rich-plasma (PRP) injection prior to intracytoplasmic sperm injection (ICSI) cycles has been advised to improve both the quantity and quality of oocytes and embryos, owing to its regenerative properties for ovarian milieu ultimately improved ART outcomes.

**Objective :** This study aims to evaluate the impact of ovarian PRP therapy compared to control in Poseidon POR females undergoing ICSI cycles.

**Material and Methods:** A randomized controlled trial was conducted from Jan 2024 to Feb 2025, involving 102 Poseidon POR women. Participants were divided into a PRP group (n=50), who received ovarian PRP injections and a control group (n=52), who received no PRP. All participants underwent ICSI cycles, embryological and pregnancy outcomes were compared between both groups within each Poseidon group.

**Results:** metaphase II (MII) oocytes count showed increment in the PRP group compared to controls ( $p$  value=0.036). However, the mean number of MII oocytes remained comparable in both groups respectively ( $3.8\pm2.6$  vs  $4.2\pm1.8$ ). Alongside, no significant differences in embryological outcomes or pregnancy rates were noticed in PRP and control patients among all Poseidon groups (all  $p$  value>0.05).

**Conclusion:** Although ovarian PRP might increase MII oocytes count in Poseidon POR women underwent ICSI cycles. When compared to control, it does not provide significant benefits for oocyte and embryo parameters, nor does it improve pregnancy rates in these women.