

Abstract citation ID: deaf097.1020**P-714 Unlocking better outcomes: comparing rFsh+rLH(2:1) vs. rFSH for blastocyst formation and clinical pregnancy in older women with low ovarian reserve in IVF/ICSI****K. Kadam¹, D. Natu², D. Akhani¹**¹Corion Fertility Clinic Private Limited, Reproductive Medicine, Mumbai, India²Corion Fertility Clinic Private Limited, Reproductive Medicine, Mumbai, India**Study question:** Is Pergoveris (rFSH+rLH, 2:1) better than Gonal F (rFSH) with respect to age and AMH in women undergoing self ICSI cycles.**Summary answer:** Clinical pregnancies are higher in women above 38 years in Pergoveris group. Pergoveris gives higher blastulation, lesser Germinal vesicle (GV) and lower Biochemical pregnancies.**What is known already:** Patients with age > 35 years and previous poor response to ovarian stimulation (OS), benefit from LH supplementation. One of the studies confirmed LH supplementation resulted in higher implantation rates independent of maternal age and response to OS. Pergoveris with rFSH+rLH in a fixed ratio of 2:1 was developed in the presupposition that it is the optimal ratio for follicular development.

A recent Metanalysis concluded with moderate evidence that rFSH+rLH led to more ongoing pregnancies and lesser miscarriages. It also confirmed insufficient evidence to encourage or discourage stimulation regimens that include rLH combined with rFSH in ART.

Study design, size, duration: This randomized comparative study was conducted at a standalone private clinic in Mumbai, India, between 2022 and 2024, involving 297 patients undergoing self IVF/ICSI. Participants were divided into two groups: Group A (Gonal-F, n=144) and Group B (Pergoveris, n=153). Both groups had similar characteristics regarding age, indication, and AMH. The primary endpoint was clinical pregnancy, while secondary endpoints included oocytes retrieved, Grade A embryos, blastulation rates, and implantation success with respect to Age and AMH.**Participants/materials, setting, methods:** Ovarian stimulation (OS) was initiated on day 2 or 3 using either Gonal-F (Serono, Switzerland) or Pergoveris (Merck Serono, Italy), with dose determined by age, AMH, and antral follicle count. Pituitary suppression was achieved with GnRH

antagonists, and trigger administered at 18mm leading follicles. Oocyte retrieval occurred 34hours post-trigger. ICSI done and embryos cultured to day 5. One to two embryos were transferred using a soft catheter, and pregnancy was tested 10 days post-transfer

Main results and the role of chance: Data analysis was performed using PASW SPSS version 18. Comparisons between groups were made using the Student's unpaired t-test, while the Chi-square test was used for percentage comparisons among three or more groups. A p-value of <0.05 was considered statistically significant.The Pergoveris group had a significantly higher mean age compared to the Gonal-F group (36.83 ± 4.17 vs 34.58 ± 3.58 , $p < 0.001$), with more patients aged 35-40 years (72 (47.1%) vs 56 (38.9%), $p < 0.001$). Pergoveris required a significantly higher dose of medication (3372.63 ± 1674.39 vs 2997.26 ± 1141.42 , $p < 0.02$) and showed a lower number of germinal vesicle (GV) oocytes (0.42 ± 0.90 vs 0.82 ± 1.65 , $p < 0.01$). However, the Pergoveris group exhibited a significantly higher day 5 blastocyst formation rate (1.54 ± 2.10 vs 0.57 ± 1.68 , $p < 0.001$) and a lower biochemical pregnancy rate (8 (25%) vs 11 (22.9%), $p < 0.02$). The Gonal-F group had better quality day 3 embryos.

In patients under 35 years, clinical pregnancy rates were higher in the Gonal-F group (19 (26.0%) vs 9 (21.4%)). However, for those aged 35 and above, pregnancy rates were comparable between groups, with Pergoveris showing better outcomes in women over 38 with AMH <1.2ng/mL (5 vs 3 pregnancies).

Limitations, reasons for caution: The study's limitations include its single-center design, potential selection bias due to age and treatment group allocation, and the relatively small sample size. Additionally, the higher cost of Pergoveris may limit its broader applicability in resource-limited settings.**Wider implications of the findings:** Pergoveris offers distinct benefits and targeted approach to improve pregnancy rates in the challenging cohort of Poseidon group 4. Higher day 5 blastocyst rate suggests LH supplementation enhances embryo development, increasing viable embryos. Overall findings highlight need for personalized; age-specific treatment strategies. Multi-centric larger studies would benefit to confirm results.**Trial registration number:** No