9th Yazd International Congress and Student Award on Reproductive Medicine with 4th Congress of Reproductive Genetics

Key Lectures

K-61
Mimicking nature in wise strategy

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Controlled ovarian stimulation (COS) remains a challenging clinical step in assisted reproductive technique, especially in some specific patients group in which no evidence-based guidelines are available. Up to now, the clinical approach to the infertile women needs several decisions that reside in the clinician's hands. For this reason, COS is one of the cornerstones of in vitro fertilization (IVF). Today the measure of success in IVF must be the cumulative live birth rate per started cycle. Its purpose is to obtain an adequate response in terms of oocytes' number and quality to improve treatments' efficacy and efficiency by obtaining several competent embryos. The ability to predict the ovary response is the priority to obtain the right number of oocytes and to define the right individual treatment for the right patients. Many factors can be used as predictors of ovarian response such as: age, biochemical parameters, follicle-stimulating hormone (FSH), anti-müllerian hormone, and morphological parameters (antral follicular count) but also some clinical conditions like polycystic ovary syndrome and low body mass index.

Although some data suggested that recombinant-FSH and human menopausal gonadotropins (hMG) for COS in long agonist protocols perform similarly, the evidence is limited in antagonist protocols, i.e. the most commonly used at present. Therefore, the decision on which gonadotrophins should be used for COS is still uncertain, especially in patients at their first COS (naïve) and/or in freeze-all strategies. However according to the evidence already published r-FSH and hMG have a different endocrine profile, the serum levels of FSH, androgens, and estradiol were significantly higher with hMG than r-FSH in conventional COS. Moreover r-FSH significantly increases the number of oocytes retrieved and embryos obtained compared with hMG after COS. The duration of COS was significantly longer and the total amount/dose of gonadotropin was significantly higher with hMG than with r-FSH.

Finally, no difference has been reported in term of ovarian hyperstimulation syndrome risk and ovarian hyperstimulation syndrome profile between hMG and r-FSH Regarding luteinizing hormone (LH) activity during COS, LH supplementation in COS continues to be actively debated and controversial, causing some confusion between practitioners. Current evidence suggests that r-LH supplementation appears to be beneficial in i) hypo-hypo, ii) patients with hyporesponse to FSH monotherapy, iii) advanced maternal age, iv) patients with very low endogenous LH during COS.

Finally, r-FSH + r-LH combination may be effectively used to obtain COS in IVF patients without increasing the overall costs for the patients or the National Health Service in a specific setting.