Comparison of the two different luteal phase support regimes and evaluation of IVF-ICSI outcomes

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Context: Although several luteal phase support regimes have been utilized for many years, there is no consensus about which one is the best.

Objective: The purpose of this study was to evaluate clinical pregnancy rates, miscarriage rates, ongoing pregnancy rates and IVF-ICSI outcomes of gonadotropin releasing hormone agonist (GnRHa) administration compared to human chorionic gonadotropin (hCG) application for luteal phase support.

Methods: All the patients were treated with antagonist protocol and single embryo transfer was performed in all cases. The patients were divided into two groups according to the luteal phase support.

Patients: A total of 456 patients were included in the study.

Interventions: In group 1 (n=158), single dose triptorelin acetate 0.1 mg was given on the sixth day after the oocyte pickup (OPU). In group 2 (n=298), hCG 1500 iu was given on the 4, 7, and 10th day after the OPU. All the subjects were treated with vaginal progesterone.

Main Outcome Measures: To compare the clinical pregnancy rate.

Results: Both groups were homogenous in relation with age and antral follicle count (AFC). Number of stimulation days and endometrial thickness on hCG day (mm) were found to be significantly higher in group 2 than group 1 (p<0.001). Clinical pregnancy rate was slightly higher in GnRHa group but, this difference was not statistically significant.

Conclusion: Although the lack of statistically significant difference between the two groups, luteal phase support with single dose GnRHa might be as efficient as three doses of hCG. Large prospective randomized controlled studies are required comparing GnRHa and hCG for luteal phase support.