

Evaluating two methods of step-down and fixed-dose regimens of hMG administration in infertile women undergoing ZIFT treatment

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Abstract

Introduction: From half a century ago, exogenic gonadotropins have been used by different methods for ovulation induction in the treatment of ovulatory problems and in ART. According to the extensive use of step-down and fixed-dose regimens of hMG in ovulation induction and in view of the fact that previous studies have not provided similar results, are expensive and have some complications, this study was performed to compare the aspects of the two methods that follows: hMG dosage, the need for increasing the dosage during therapy, endometrial thickness, pattern of endometrium and pregnancy rates.

Materials and Methods: In this historical cohort study, 245 cycles of each regimen used in infertile patients who had been admitted to Shariati Hospital in Tehran during 2003-2004, were reviewed. All patients were under 35 and had not volunteered for zygote donation and were not suffering from PCOS or hypothalamic amenorrhea too. After the pituitary gland suppression by long-term GnRH agonist protocol, employing the step- down regimen, the initial dose of hMG, 2-4 ampoules (150 IU each), was administered and then in several stages the dosage was lowered, about 0.5 ampoule every 2-3 days based on sonographic findings. In the fixed dose regimen, 2-4 ampoules of hMG were administered without any decrease throughout the cycle. After injection of hCG, the resultant oocytes were used in ZIFT. The data were analyzed by SPSS software, using t-test, χ^2 and Fishers exact test. Differences were considered significant at 5% level ($p\text{-value} \leq 0.05$).

Results: In the two mentioned regimens, the mean number of oocytes which were retrieved, grades of zygotes, endometrial thickness and pregnancy rates didn't have significant statistical differences. There were significantly more triple lines and less echogenic patterns of endometrium in step- down regimen ($p\text{-value}=0.001$). The mean number of used hMG ampoules in step- down regimen was significantly lower than the fixed- dose (26.4 versus 32.2 respectively, $p\text{-value}=0.000$) as the need for increasing the dosage during treatment was 42 cycles (17.1%) versus 99 cycles (40.4%) respectively; $p\text{-value}=0.000$.

Conclusion: According to significant differences in pregnancy rates and outcomes between the two regimens, the step- down regimen, by administering less hMG, seems to be better but further investigations by including patients suffering from PCOS, hypothalamic amenorrhea, etc in the study are needed to generalize these results.

Key Words: Ovulation Induction, hMG, Fixed-dose Regimen, Step-down regimen, Infertility, ART, ZIFT.

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