

**Low dose and early discontinuation of gonadotropin-releasing hormone agonist
for controlled ovarian hyperstimulation in *in vitro* fertilization program**

¹Lee S.L., ¹Tsai I.W., ²Su J.H.

¹Lee's Infertility Clinic, ²Department of Obstetrics and Gynecology,
Kaohsiung Medical University, Kaohsiung, Taiwan.

INTRODUCTION: To assess the applicability of low dose and early discontinuation of gonadotropin-releasing hormone agonist (GnRha) for controlled ovarian hyperstimulation (COH) in *in vitro* fertilization (IVF) program.

METHODS:

DESIGN: Retrospective study.

SETTING: Private outpatient basis IVF program.

SUBJECTS: Four hundred eighty seven women underwent 555 cycles of IVF.

INTERVENTIONS: All the cycles were divided into four groups according the dose and duration of GnRha used: group 1 (leuprolide acetate 0.5mg for short 5-day protocol), group 2 (buserelin acetate 0.1mg for short 5-day protocol), group 3 (leuprolide acetate 0.5mg for modified long protocol), and group 4 (busereline acetate 0.1mg for modified long protocol) to achieve COH. Oocyte retrieval was performed 34-36 hours after human chorionic gonadotropin (hCG) injection, followed by embryo transfer 3 days later.

MAIN OUTCOME MEASURES: The concentrations of estradiol (E₂), luteinizing hormone (LH), and progesterone (P), gonadotropin dosage, the number of oocyte retrieval, oocyte fertilized, endometrial thickness, number of embryo transferred, implantation rate, and pregnancy rates (PRs).

RESULTS: There was no spontaneous LH surge in any of these four groups of cycles. LH levels on the hCG injection day were lower in the modified long protocols (groups 3 and 4) than in the short 5-day protocols (groups 1 and 2). Higher LH and P levels on hCG day in group 1 resulted in worse fertilization rates, and clinical PRs. Higher E₂ level on hCG day in group 3 resulted in worse implantation rates.

CONCLUSIONS: In COH, the early discontinuation of GnRha could be safe before hCG administration without risking a premature increase of serum LH. Moreover, the lower dose of GnRha offered a useful alternative for COH in IVF program. Further, more lower E₂ level leading to an increased implantation rate.