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OBJECTIVE: Unlike GnRH agonist in vitro fertilization (IVF) cycles, antagonist cycles provide two options to stimulate final oocyte maturation ("trigger"): (1) recombinant hCG (recHCG) or (2) induction of an endogenous LH surge through administration of a GnRH agonist (GnRHa). The aim of this study was to compare progesterone rise, oocyte maturation, blastulation, and embryo yield in patients undergoing their first antagonist cycle who received recHCG versus GnRHa to induce oocyte maturation.

DESIGN: Retrospective.

MATERIALS AND METHODS: First IVF cycles employing GnRH antagonists performed at a single center between June 2000 and April 2013 were analyzed. Patients were matched for age, BMI, peak estradiol level, and mature follicle count (follicles >15mm). Relative progesterone rise (day after trigger progesterone: trigger day progesterone), oocyte maturation rate and blastulation rate (blastocyst per 2pn), and embryo yield were compared among those who received recHCG versus GnRHa for induction of oocyte maturation.

RESULTS: 5,051 first IVF cycles employing GnRH antagonists were identified. After matching for age, BMI, peak estradiol, and mature follicle count, 157 cycles were analyzed. recHCG was used to induce final oocyte maturation in 82 cycles while 75 cycles utilized a GnRHa-induced LH surge. Though oocyte maturation and blastocyst formation rates were similar between the groups, relative rise in progesterone and overall embryo yield were higher in those who received GnRHa(table).

Outcomes of antagonist cycles utilizing recHCG versus GnRHa to induce final oocyte maturation

	recHCG	GnRHa	p
Age	33.5	32.7	0.2
BMI	25	26	0.3
Peak Estradiol	3323	3449	0.4
Relative Progesterone Rise	4.6	5.8	<0.05
Mature Follicle Count	11	12	0.4
Oocytes Retrieved	22	28	<0.05
Percent Mature Oocytes (%)	75	73	0.5
Blastulation Rate (%)	38	38	0.9
Embryo Yield	5	6	<0.05

CONCLUSION: During antagonist IVF cycles, induction of an endogenous LH surge through administration of a GnRHa enhances progesterone rise and improves embryo yield.

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OVARIAN STIMULATION USING LOW-DOSE MENOTROPINS IN COMBINATION WITH CLOMIPHENE CITRATE RESULTS IN BETTER EMBRYO QUALITY THAN GONADOTROPIN-ONLY PROTOCOLS. V. G. Garzo,[a] H. I. Su,[a,b] D. R. Meldrum,[a,b] A. Williams,[a] A. L. Yeo,[a] A. J. Duleba.[a,b] [a]Reproductive Partners - UCSD Regional Fertility Center, La Jolla, CA; [b]Department of Reproductive Medicine, University of California, San Diego, La Jolla, CA.

OBJECTIVE: Patients undergoing IVF that result in poor embryo quality have a decreased chance of success. Most ovarian stimulation protocols use only gonadotropins dosed according to ovarian reserve. We studied whether a combination of clomiphene citrate and low-dose menotropins improves embryo quality in patients who had a history of poor embryos in gonadotropin-only cycles.

DESIGN: Retrospective Cohort.

MATERIALS AND METHODS: The study compared two protocols of ovarian stimulation in IVF: low stimulation (LS, n=38 cycles) consisted of daily clomiphene citrate (100 mg) and 150 IU of menotropins (dose unchanged throughout the stimulation); standard stimulation (SS, n=38 cycles) consisted of standard FSH/HMG protocol dosed by ovarian reserve. Subjects (n=27) had median age of 38.5, cycle day 3 FSH of 7.9 IU/L and AMH 1.1 ng/mL. Each subject underwent at least one cycle of LS and one cycle of SS. The outcomes were Day 3 embryo quality (scale from 1 [poor]-3 [good]) and blastocyst quality on Day 5 (scale 0 [arrested]-7 [expanded, good]). All embryos from the study protocol were vitrified and transferred in an artificial cycle. Outcomes were compared using t-test, Van der Waerden Test, as appropriate.

RESULTS: Comparison of selected outcomes:

	LS (N=38)	SS (N=38)	P-value
Number of oocytes retrieved	8.9±1.0	10.0±1.2	0.44
Number of oocytes inseminated	6.9±0.7	6.8±0.7	0.93
Number of 2PN embryos	5.0±0.6	4.6±0.6	0.66
Quality of the best embryo on day 3	2.91±0.05	2.67±0.11	0.047
Average embryo quality on day 3	2.46±0.08	2.04±0.10	0.002
Quality of the best blastocyst	6.1±0.16	4.5±0.5	0.01
Average blastocyst quality	3.73±0.34	1.79±0.26	0.0004

Values represent means ± SEM.

CONCLUSION: In this pilot study, embryo quality significantly better when using clomiphene citrate in combination with a lower dose of gonadotropins. These data support performance of a randomized trial for women demonstrating poor embryo quality after IVF to exclude regression to the mean as a source of the differences observed.

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FOLLICULAR ESTROGEN FOR GnRH-ANTAGONIST PROTOCOL PROGRAMMING: A PROSPECTIVE RANDOMIZED CLINICAL TRIAL. A. Hershko Klement, A. Berkovitz, A. Wiser, O. Gonen, K. Amichay, A. Shulman. Obsterics and Gynecology, Meir Medical Center, Kfar Saba, Israel.

OBJECTIVE: GnRH antagonist protocol has gained popularity due to its relative simplicity, though starting day is inflexible and OPU takes place on weekends in 14.3% of our patients. We aim to program GnRH antagonist cycles according to the workweek, without any compromise of success rates or quality rates.

DESIGN: This is a randomized clinical trial.

MATERIALS AND METHODS: Patients under the age of 37 years referred to our IVF unit are randomized into 2 groups: The GnRH antagonist group ("treatment") and the long luteal GnRH agonist protocol group ("control") .In order to minimize any deleterious effect, we limited the programming intervention to the "treatment" group; in the "control" group we practice our routine management. The "treatment" group is programmed to start gonadotropin induction on Friday by the use of oral follicular estrogen (4 mg) from the second day of a spontaneous cycle until the first Friday to follow. Pickup day is dictated by 1-2 leading follicles measuring 18 mm in both groups. Main outcome measure is weekend pickup rate. Secondary outcome measures are number of mature oocytes, failure to achieve embryo transfer and pregnancy rate.

RESULTS: This is an ongoing study; to this point a total of 59 patients were recruited, 30 randomized to the "treatment" group and 29 to the "control" group. No cancellations were registered. Demographical and cycle characteristics were comparable between treatment groups. None of the cases in the programmed group went through an OPU on weekends, relative to the 14.3% background rate. Mean oocyet number was 10.2 in the "treatment" group and 9.5 in the "control" group (P value >0.5). Failure to transfer embryos happened in 12.5% of "treatment" group and 8.7% of "control" group (P value 0.16). Clinical pregnancy rates were 40.9% and 45.5% respectively (P value >0.5).

CONCLUSION: Programming of GnRH antagonist cycles by follicular estrogen administration is a promising option for tailoring this popular treatment to the workweek routine.

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DOES IGNORING OF THE THE GnRH-ANTAGONISTS ON THE DAY OF hCG EFFECT CYCLE OUTCOME DURING GnRH-ANTAGONIST PROTOCOL? C. Iltemir Duvan,[a] Y. Onaran,[a] A. Ayrim,[a] A. Pekel,[a] H. Kafali,[a] N. Ozturk Turhan.[b] [a]Obstetrics and Gynecology, IVF Unit, Turgut Ozal University School of Medicine, Ankara, Turkey; [b]Obstetrics and Gynecology, Mugla University School of Medicine, Mugla, Turkey.