waste and participates in molecular signaling. Defects result in abnormalities in the oocyte's nuclear and cytoplasmic maturation. Though poor oocyte quality is routinely observed in older women, the impact of reproductive aging on GC function has so far not been fully elucidated and, therefore, was subject of this investigation.

DESIGN: Prospective case control study.

MATERIALS AND METHODS: We examined effects of aging on cell proliferation and gene expression in in vitro cultured human GCs in 4 young oocyte donors (ages 21-30 years), 4 younger (22-37 years) and 4 older (42-47 years) infertility patients. GC proliferation was examined by counting cell number with a hematocytometer, apoptosis by DAPI staining and gene expression by real-time PCR, following *in vitro* culture in presence or absence of 10IU/ml follicle stimulating hormone (FSH).

RESULTS: We observed statistically significantly lower proliferation and higher apoptosis with advancing female age during *in vitro* culture of GCs. FSH supplementation in culture stimulated GC growth and prevented luteinization, evaluated by FSH receptor and aromatase mRNA expression; but this effect completely dissipated with advancing female age.

CONCLUSION: These data demonstrate age-related functional declines in human GCs, characterized by changes in GC luteinization, proliferation, apoptosis and ability to respond to FSH during *in vitro* culture. Poor oocyte quality in older infertile women may, therefore, at least in part, be related to the loss of normal ovarian GC function.

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THE CYCLE OUTCOMES OF GNRH AGONIST TRIGGERING WITH DIFFERENT LEUPROLIDE ACETATE DOSES IN HIGH RESPONDER PATIENTS. R. Pabuccu,[a,b,c] E. G. Pabuccu,[a] G. Caglar,[a] B. Yilmaz,[a] A. Yarci.[a] [a]Obstetrics and Gynecology, Ufuk University School of Medicine, Ankara, Turkey; [b]Centrum Clinic IVF Centre, Ankara, Turkey; [c]Dogufertil IVF Centre, Malatya, Turkey.

OBJECTIVE: Purpose of the study is to compare the impact of different leuprolide acetate doses on cycle outcomes and OHSS rates in high-risk patients undergoing ovarian stimulation.

DESIGN: Retrospective cohort study of high-responder patients.

Table-1: Demographic characteristics of groups

	Leuprolide 1 mg group (n:38)	Leuprolide 2 mg group (n:39)	p-value
Age (years) Mean ±SD [95% CI]	29.9±5.0 [28.2-31.5]	30.1±4.5 [28.7-31.6]	0.811
Duration of infertility (months) Median (min-max)	51.0 (8.0-240.0)	48.0 (12.0-240.0)	0.701
Day3 FSH (IU/L) Median (min-max)	5.5 (3.0-9.0)	5.3 (2.0-8.2)	0.920
Duration of stimulation (days) Median (min-max)	10.0 (6.0-20.0)	9.0 (8.0-12.0)	0.013
Total dose of gonadotropins (IU) Median (min-max)	1475.0 (635.0-2550.0)	1525.0 (1025.0-3500.0)	0.695
Number of retrieved oocytes Median (min-max)	17.5 (4.0-42.0)	15.0 (9.0-25.0)	0.510
Number of M2 oocytes Median (min-max)	13.5 (3.0-40.0)	12.0 (5.0-20.0)	0.503
Number of fertilized oocytes (2PN) Median (min-max)	10.0 (3.0-32.0)	10.0 (1.0-16.0)	0.128
Fertilization rate (%) Median (min-max)	83.3 (42.8-100.0)	75.0 (20.0-100.0)	0.006
No. embryos transferred	1.23±0.43	1.17±0.38	0.541
No. good quality embryos transferred	0.76±0.67	0.61±0.54	0.227
Implantation rate (%)	46%	55.1%	0.419
Clinical pregnancy rate n (%) [95% CI]	16 (42.1%) [27.9 - 57.8]	15 (38.5%) [24.9 - 54.1]	0.744
Mild/severe OHSS n (%) [95% CI]	-	1 (2.6%) [0.004 - 13.2]	1.000

MATERIALS AND METHODS: After reviewing electronic database of two IVF units, total of 77 high-responder cases were detected receiving gonadotropin releasing hormone agonist (GnRH-a) for the final oocyte maturation during 3 years period in 2 different IVF centres. Group 1 was consisted of 38 patients patients who received 1 mg of agonist and group 2 was consisted of 39 patients who received 2 mg of agonist. In both centers, the criteria of agonist application are: being at high risk of OHSS by a high number of follicles (>12) measuring ≥12 mm and/or high serum estradiol levels (≥4000 pg/ mL) during the late follicular phase of the ovarian stimulation.

RESULTS: Number of retrieved oocytes (17.5 vs 15.0, p=0.510), implantation rates (46% vs 55.1%, p=0.419) and clinical pregnancy rates (42.1% vs 38.5%, p=0.744) were similar among groups. There was no mild or severe OHSS case detected in Group 1. Only 1 mild OHSS case was detected in Group 2 (Table 1).

CONCLUSION: 1 or 2 mg leuprolide acetate yields similar outcomes when used for the final oocyte maturation in high-responder patients.

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GENERATION OF LIVE OFFSPRING FROM VITRIFY-WARMED METAPHASE I-METAPHASE II MOUSE OOCYTES FOLLOWING INTRACYTOPLASMIC SPERM INJECTION. C.-C. Chang,[a] W.-F. Chang,[b] C.-C. Chang,[b] J. Xu,[c] Z. P. Nagy,[a] L.-Y. Sung.[b] [a]Reproductive Biology Associates, Atlanta, GA; [b]National Taiwan University, Taipei, Taiwan; [c]University of Michigan Medical Center, Ann Arbor, MI.

OBJECTIVE: The in vitro maturation (IVM) of MI oocytes without surrounding cumulus cells, called rescue IVM oocytes, has triggered a significant interest on clinical applications recently. However, due to asynchronous cell cycle, it has been reported that these rescued human IVM MI-II oocytes yield lower fertilization rates, multi-nucleation, and even abnormal embryonic development compared to in vivo matured (IVO) oocytes. In this study, a mouse model was used to investigate the efficiency of the rescued IVM MI-MII oocytes which have been vitrify-warmed in order to adjust the maturity of ooplasm with precise IVM schedule and fertilization timing.

DESIGN: Experimental study.

MATERIALS AND METHODS: Metaphase I (MI; 7 h post hCG) and metaphase II (MII; 15 h post hCG) oocytes were collected form B6D2F1 mice. The surrounding cumulus cells of metaphase I oocytes were removed before another 8 h rescue IVM. The IVO MII and rescue IVM MI-II oocytes were vitrified in a medium with 15 % ethylene glycol (EG), 15 % dimethyl sulphoxide (DMSO) and 0.5 M sucrose. In group 1, fresh IVO MII oocytes were injected with a sperm as a control. After oocyte warming, the vitrified IVO MII (group 2) and vitrified IVM MI-II oocytes (group 3) were injected with a sperm to initiate subsequent embryo development.

RESULTS: The maturation rate was 84.0% (664/790) from IVM MI-II oocytes. The survival rates were 95.3% (589/617) vs. 96.8% (644/664) (group 2 vs. 3, NS) following vitrification/warming. The cleavage rates were 73.3% (376/517) vs. 56.4% (341/617) vs. 50.7% (323/664) (group 1 vs. 2 and 1 vs. 3, P<0.05; 2 vs. 3, NS). The blastocyst formation rates were 56.1% (290/517) vs. 45.6% (274/617) vs. 32.4% (216/664) (group1 vs. 2, 1 vs. 3 and 2 vs. 3, P<0.05).

In vivo development

Group	No. of recipient used	No. of pregnancy (%)	No. of embryos transferred	No. of offspring born (%)
1	8	7 (87.5)	80	33 (34.3)a
2	7	5 (71.4)	90	21 (20.2)ab
3	9	7 (77.7)	132	22 (13.8)b

a, b different superscripts within the same column indicates statistical difference

CONCLUSION: In this study, we examined the developmental competency of rescued IVM MI-MII oocytes following ICSI in a schedule controlled manner with the assistance of vitrification in a mouse model, and proved that live-offspring can be generated from the rescue IVM MI-II oocytes with a satisfactory efficiency. The observations herein provide key insights into improving current rescue IVM system in human.