RESULTS: The results expressed as mean ± SD or percentages, as appropriate, are summarized below. Patient characteristics such as age, number of embryos selected for transfer, time between thaw and transfer, and embryo quality score were all similar between the two groups. No statistically significant differences were observed in the implantation and pregnancy rates.

TABLE

Variable	Group I (n = 157)	Group II (n = 197)	*P*-value
Age of embryo (yrs)	31.3 ± 4.8	32.0 ± 5.2	NS
Embryos frozen (yrs)	0.8 ± 1.0	1.0 ± 1.1	NS
Embryo survival (%)	98.6 ± 6.9	97.4 ± 10.0	NS
Time to FET (hrs)	2.7 ± 1.1	2.4 ± 1.1	NS
Number of embryos transferred	2.5 ± 0.8	2.5 ± 0.9	NS
Embryo quality score	2.6 ± 0.3	2.6 ± 0.4	NS
Implantation rate	24.1% (96/398)	23.1% (113/490)	NS
Pregnancy rate	42.7% (67/157)	42.1% (83/197)	NS

*NS = no significance.

CONCLUSIONS: The addition of hyaluronan in human ET medium neither compromises nor improves implantation or pregnancy rates in frozen blastocyst ET cycles.

Supported by: None.

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EFFECT OF OXYGEN CONCENTRATIONS ON IVM, IVF AND EMBRYO DEVELOPMENT OF IMMATURE OOCYTES FROM STIMULATED CYCLES OF HUMAN IVF-ET PROGRAM. E. A. Kim, E. K. Kim, K. Y. Kang, M. A. Choi, H. Kwon, D. H. Choi. Infertility Center, Bundang CHA Women's Hospital, Seongnam-si, Bundang-gu Yatap-dong, Kyunggi-do, Korea.

OBJECTIVE: To compare the effect of oxygen tension during in vitro maturation (IVM), in vitro fertilization (IVF) and embryo development on stimulated immature oocytes.

DESIGN: A prospective study.

MATERIALS AND METHODS: 26 patients were included in the study between May 2006 and April 2007. Retrieved immature oocytes were transferred into 2 different oxygen tension in vitro culture condition for 6 days according to experimental design; 1) Group A: 20% O_2 (atmospheric oxygen concentration), Group B: 5% O_2 (phyiologic oxygen concentration). Immature oocytes were cultured in TCM-199 medium with 20% patient's follicular fluid, r FSH (7 IU/ml), E_2 (10 IU/ml), amd rhCG (10 IU/ml), and then matured oocytes were fertilized by ICSI. Embryos evaluated for developmental stage and morphological aspects. Statistical evaluation performed using student's t-test.

RESULTS: There were no statistically significant differences of patien's ages and infertility durations between two groups. The differences on oxygen concentration did not significantly affect maturation, fertilization. But the development rate of low oxygen group (5% O_2; 46.7%) was higher than high oxygen group (20% O_2; 42.9%).

TABLE 1. The clinical results between two different groups cultured under either 5% or 20% O_2

	Group A (20% O_2)	Group B (5% O_2)
Number of cycles	16	10
Age (M ± SD) (yrs.)	33.6 ± 3.7	33.1 ± 3.6
Duration of infertility (M ± SD) (yrs.)	5.6 ± 3.0	5.5 ± 3.6
No. of immature oocytes/cycle (M ± SD)	2.0 ± 1.0	3.0 ± 1.6
No. of mature oocytes/cycles (M ± SD)	1.9 ± 1.1	2.7 ± 1.2
No. of embryos/cycles (M ± SD)	1.8 ± 0.8	1.9 ± 0.8
No. of good embryos ≥ Morulae (%)	42.9 (12/28)	46.7 (7/15)

CONCLUSIONS: Immature oocytes from stimulated IVF program were improved in case of development rate in low oxygen tension.

Supported by: None.

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COMPARISON OF A SINGLE MEDIUM WITH SEQUENTIAL MEDIA FOR THE DEVELOPMENT OF HUMAN ZYGOTES TO THE BLASTOCYST STAGE. A. Vansteenbrugge, C. Vastersaegher, P. Fontaine, C. Klay, D. Rodez, P.-C. Pauwels. Service PMA, Centre Hospitalier Régional, Namur, Belgium.

OBJECTIVE: It has been suggested that sequential media that mimic the physiological conditions in the female reproductive tract are required for optimal development of the human embryo to the blastocyst stage. The objective of this study was to determine if sequential media are really necessary.

DESIGN: Oocytes were retrieved from 79 patients (31.2 ± 4.2 years of age, >7 oocytes) and randomly divided to be cultured to Day 5 in a single medium (Group 1, Global, IVFonline) or in sequential media (Group 2, G1.3/G2.3, Vitrolife).

MATERIALS AND METHODS: Oocytes (N = 1098) were fertilized by ICSI, or by conventional IVF in Human Tubal Fluid (Group 1) or G-FERT (Group 2). Inseminations and cultures were done in 500 μl of medium in 4-well dishes (Nunc) in an humidified atmosphere containing 6% CO2 and 5% O2 at 37°C. On Day 1, Group 1 zygotes were placed in Global + 7.5 mg/ml HSA (Irvine Scientific), Group 2 zygotes into G1.3. On Day 3, Group 1 embryos were moved to a new well of Global + HSA, Group 2 embryos to G2.3. On Day 5, the best one or two embryos, predominantly blastocysts, were selected for transfer. Only Group 1 embryos were used in 41 transfers, only Group 2 embryos in 26 transfers. The number of embryos transferred (1.4 ± 0.6 vs. 1.2 ± 0.4) was not different. Proportions were compared by Chi-square analysis.

RESULTS: For Group 1 and 2, fertilization (61.9 vs. 56.7%) and cleavage (100.0 vs. 99.3%) rates were not different. On Day 3, a significantly greater proportion of Group 1 than Group 2 embryos had ≥7 cells (61.5 vs. 42.6%, $P<0.001$). On Day 5, a significantly greater proportion of Group 1 than Group 2 embryos were blastocysts or morulae (69.0% vs. 53.3%, $P<0.001$). The proportion of blastocysts was also significantly greater in Group 1 than in Group 2 (54.9 vs. 32.2%, $P<0.001$). Initial (65.9 vs. 69.2%) and ongoing (53.7 vs. 53.8%) pregnancy rates, and implantation rates (50.9 vs. 50.0%) were not different for Group 1 and 2 embryos.

CONCLUSIONS: The results show that a single medium (Global) supports human embryo development to blastocyst as well as sequential media (G1.3/G2.3) and therefore sequential media may not be necessary. Furthermore, the ability of embryos cultured in the single medium to further develop and implant, with results similar to embryos cultured in the sequential media, demonstrates that blastocysts developed in the single medium are of excellent quality.

Supported by: None.

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IN VITRO ENHANCEMENT OF HUMAN EMBRYONIC DEVELOPMENT BY COCULTURE WITH AUTOLOGOUS GRANULOSA CELLS. Y. Pan, A. Hershlag, G. M. Scholl, H. Yang, H. L. Feng. Department of Obstetrics and Gynecology, North Shore University Hospital, Manhasset, NY.

OBJECTIVE: To determine whether co-culture with autologous granulosa cells can improve embryos quality and clinical outcome.

DESIGN: Retrospective matched pair analysis.

MATERIALS AND METHODS: A total of 323 cycles were selected from cycles performed in 2006. Exclusion criteria include single embryo available on day 3, blastocyst transfer, donor oocytes and PGD. Embryos were randomly divided into two culture systems: co-culture with autologous granulosa cells (Coculture group, CC) and conventional culture (Non Coculture group, NCC). The coculture system was prepared by dissecting a small piece of granulosa cells mass, placed as a microdroplet (50 μl) in the pre-warmed culture dishes. 18 ~ 22 hours following insemination or ICSI, embryos were