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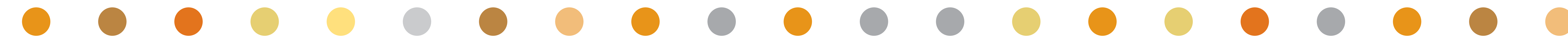
SUCCESS RATE FOR SURGICALLY RETRIEVED SPERM COMPARED TO EJACULATE SPERM IN MODIFIED NATURAL CYCLE IVF (nIVF)

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ABSTRACT

Introduction: IVF/ICSI is introduced as a treatment modality for severe male factor infertility and in cases of severe oligospermia or azoospermia, surgical sperm retrieval utilizing PESA or TESE followed by ICSI has been shown to achieve high rates of fertilization and pregnancy success.

Modified natural cycle IVF (nIVF) could be utilized as an alternative to stimulated IVF (sIVF) with the advantage of lower costs and risks of OHSS or multiple gestations.

This study aimed at comparing success rates of surgically retrieved versus ejaculated sperm for nIVF/ICSI cycles.

Materials and Methods: This a retrospective cohort study which included all nIVF/ICSI cycles that were carried at OVO fertility center over a period of 4 years for male infertility indications with female partners of age 35 years or less, a total of 132 cycles were divided into group A (PESA, n=32), group B (TESE, n=7) and group C (ejaculate, n=93). Outcomes of interest included fertilization, cleavage, biochemical and clinical pregnancy rates which were compared between the study's cohorts

Results: No statistical differences were found on comparing baseline characteristics for all cohorts except for mean male age which was statistically higher in surgically retrieved sperm (Group A 41.7 years) (Group B 41 years) than ejaculated sperm (Group C 36 years), P-value <0.05.

Fertilization and cleavage rates were statistically similar for all the cohorts. No statistical differences were found on comparing biochemical and clinical pregnancy rates either per OPU or per ET for all cohorts.

Conclusions: This study concluded comparable success rates for nIVF/ICSI cycles including biochemical and clinical pregnancy rates per OPU and per ET for surgically retrieved sperm in comparison to ejaculate sperm for male factor infertility indications with female partners of age 35 years or less. nIVF/ICSI could be offered as an alternative to stimulated IVF in those cases with the advantage of lower costs and lower risks of OHSS and multiple gestations.

OBJECTIVE

The aim of this study was to compare success rates of surgically retrieved versus ejaculated sperm for nIVF/ICSI cycles in terms of fertilization, cleavage, biochemical and clinical pregnancy rates.

METHODS

A retrospective cohort study which included all nIVF/ICSI cycles that were carried at OVO fertility center over a period of 4 years (February 2004 to December 2008) for male infertility indications with female partners of age 35 years or less, a total of 132 cycles were divided into group A (PESA, n=32), group B (TESE, n=7) and group C (ejaculate, n=93). Outcomes of interest included fertilization and cleavage rates. Biochemical and clinical pregnancy rates per both OPU and ET were also compared between the cohorts.

STATISTICS

Results are expressed as means with 2 standard deviations or percentages. Student t-test for nominal data, chi square and fisher exact tests for categorical data were used where appropriate.

RESULTS

Table 1. Comparison of Baseline characteristics of study's cohorts

	Group A PESA	Group B TESE	Group C Ejaculate	P-Value
Patient's No.	32	7	93	
Female Age* (y)	32 ± 2.6	31.4 ± 2.5	31.3 ± 3	NS
Male Age* (y)	41.7 ± 8.2	41 ± 5	36 ± 5.4	<0.05
No. oocytes collected*	1.1 ± 0.2	1 ± 0	1.1 ± 0.3	NS
Oocyte maturity %	100	100	98.4	NS

* Mean ± 2 standard deviations

Table 2. comparison of outcomes of interest between study's cohorts

	Group A PESA (N 32)	Group B TESE (N 7)	Group C Ejaculate (N 93)	P-Value
Fertilization rate %	72	71.4	63	NS
Cleavage rate %	100	100	96.6	NS
Assisted Hatching %	26.1	40	36	NS
ET / OPU %	71.9	71.4	63.4	NS
No. embryos / ET*	1 ± .02	1 ± 0	1.1 ± 0.3	NS
Biochemical Pregnancy / OPU %	18.8	42.8	18.3	NS
Biochemical Pregnancy / ET %	26.1	60	28.8	NS
Clinical Pregnancy / OPU %	12.5	42.8	11.8	NS
Clinical Pregnancy / ET %	17.4	60	18.6	NS

* Mean ± 2 standard deviations

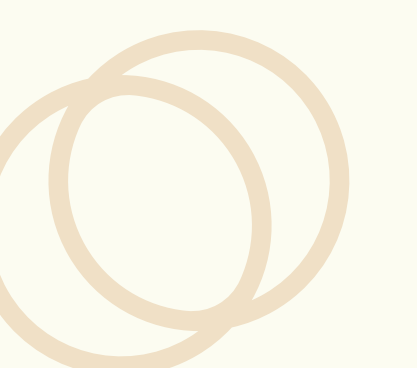
DISCUSSION

IVF/ICSI has been introduced as a treatment modality in cases of severe male factor infertility with high rates of fertilization and pregnancy.¹ Surgical sperm retrieval utilizing PESA or TESE followed by ICSI has been shown to achieve similarly high rates of fertilization and pregnancy.² The clinical pregnancy rate per embryo transfer following modified nIVF was reported to be 27% compared to 47% in sIVF cycles for patients aged less than 35 years old. However, natural cycle patients could attempt consecutive cycles with much less medical and financial impact, the advantage of lower risks of OHSS or multiple gestations, and with a cumulative clinical pregnancy rate which approaches that of sIVF.^{3,4}

This study concluded comparable success rates for nIVF/ICSI cycles including biochemical and clinical pregnancy rates per OPU and per ET for surgically retrieved sperm in comparison to ejaculate sperm for male factor infertility indications with female partners of age 35 years or less. Recent direction in ovarian stimulation for IVF has been towards milder protocols and application of gonadotropins, nIVF/ICSI could be offered as an alternative to sIVF in those cases with the advantage of lower costs and lower risks of OHSS and multiple gestations.

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