SURGICALLY RETRIEVED SPERM VERSUS EJACULATED SPERM IN MODIFIED NATURAL *IN VITRO* FERTILIZATION-INTRACYTOPLASMIC SPERM INJECTION (MNIVF-ICSI) CYCLES

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OBJECTIVE

To evaluate the outcome of modified natural IVF-ICSI cycles using surgically retrieved sperm versus ejaculated sperm.

DESIGN

Retrospective cohort study.

MATERIALS AND METHODS

We examined all mnIVF-ICSI cycles in women less than 35 years of age with male factor infertility performed at OVO FERTILITY between February 2004 and December 2009. Couples with multiple diagnoses were excluded. Only cycles that underwent oocyte retrieval were included in the analysis. One hundred and fifty-nine mnIVF-ICSI cycles utilising ejaculated sperm were compared to fifty-two mnIVF-ICSI cycles using surgically retrieved sperm. The sample size was considered adequate (power > 80%) for detecting a difference of at least 50% in clinical pregnancy rate per embryo transfer between cycles using ejaculated and surgically retrieved sperm. Proportion comparisons were performed by Fisher exact test. The Student t test was used to compare means.

RESULTS

There were no significant differences between the two groups in terms of the female age and oocyte maturity. The male age in the surgically retrieved sperm group was significantly higher than in the ejaculated sperm group. (Table 1) There were no significant differences in fertilisation rate or cleavage rate between the two groups (66.04% vs. 71.15%; p=0.61 and 62.26% vs. 69.23%; p=0.41 respectively). As well, there were no significant differences between the biochemical or the clinical pregnancy rate per transfer between the two groups (37.76% vs. 33.33%; p=0.69 and 32.65% vs. 27.78%; p=0.68, respectively). (Table 2)

CONCLUSION

In this first cohort study of mnIVF cycles for male factor infertility, we found no significant differences in reproductive outcomes between cycles using ejaculated and surgically retrieved sperm. The data suggest that mnIVF is a viable treatment option in couples with severe male factor infertility where surgical sperm retrieval is required.

SUPPORT

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Table 1: Demographic comparison between Group A (ejaculated sperm) and Group B (surgically retrieved sperm)

	Group A (N=159)	Group B (N=52)	p-value
Female Age	31.6 (2.9)	31.5 (2.5)	0.81*
Male Age	36.5 (5.9)	39.7 (7.5)	0.005*
No. oocytes collected	1.13 (0.45)	1.04 (0.19)	0.04*
Oocyte maturity %	97 % (174/180)	100 % (52/52)	1.00†

Data are Means (SD), unless otherwise stated
* TTest
† Fisher test

Table 2: Comparison of outcome measures between Group A (ejaculated sperm) and Group B (surgically retrieved sperm)

	Group A (N=159)	Group B (N=52)	p-value
Fertilization rate (%)	66.04	71.15	0.61†
Cleavage rate (%)	62.26	69.23	0.41†
Assisted Hatching (%)	27.67	23.08	0.59†
Embryo transfer (%)	61.64	69.23	0.32†
No. embryos / ET, mean, SD	1.07 (0.26)	1.03 (0.17)	0.25*
Biochemical Pregnancy per patient (%)	23.27	23.08	0.98†
Biochemical Pregnancy per embryo transfer (%)	37.76	33.33	0.69†
Clinical Pregnancy per patient (%)	20.13	19.23	1.00†
Clinical Pregnancy per embryo transfer (%)	32.65	27.78	0.68†

* TTest
† Fisher test

CIHR IRSC Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

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