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Title:

PREGNANCY RATES OF FRESH VERSUS CRYOPRESERVED SPERM OBTAINED BY PERCUTANEOUS TESTICULAR BIOPSY IN MEN WITH OBSTRUCTIVE AZOOSPERMIA IS DEPENDANT ON FEMALE AGE

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Objective:

A percutaneous testicular biopsy (Perc BX) is a noninvasive technique of retrieving sperm for ART in men with obstructive azoospermia. This minimally invasive technique allows for excess testicular tissue to be cryopreserved for future IVF cycle(s). This study aims to determine factors related to success in Perc BX cycles of IVF.

Design:

Retrospective cohort study

Materials and Methods:

Couples undergoing fresh IVF cycles requiring a Perc BX for obstructive azoospermia by the same urologist from May 2003 to March 2015 were reviewed. Testicular tissue was obtained utilizing a 14 gauge core needle biopsy gun and typically under intravenous sedation. Female cohorts were segregated by age (<37; ≥37) and Perc BX sample (Fresh; Thawed). Main outcomes included pregnancy and clinical pregnancy rates. Categorical variables were assessed by chi-square with significance at p-value <0.05.

Results:

Five hundred and nineteen fresh IVF cycles in which testicular sperm was utilized were evaluated. Of those, 139 used fresh Perc BX samples in their first cycle and 29 used the same thawed sample in a subsequent cycle. In female patients <37 years of age, fresh and thawed Perc BX samples showed similar pregnancy (69.23%; 61.11%) and clinical (58.24%; 50.00%) pregnancy rates. However in female patients ≥37 years of age fresh versus thawed Perc Bx



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pregnancy (66.67%; 18.18%) and clinical (60.42%; 18.18%) pregnancy rates were statistically better for the fresh Perc Bx group ($p < 0.05$).

Table:

	Fresh Perc BX and First cycle <37 yo	Thawed Perc BX sample in Second cycle <37 yo	p-value	Fresh Perc BX and First cycle ≥ 37 yo	Thawed Perc BX sample in Second cycle ≥ 37 yo	p-value
n	91	18		48	11	
Pregnancy	69.23% (63/91)	61.11% (11/18)	0.5	66.67% (32/48)	18.18% (2/11)	0.003
Clinical Pregnancy	58.24% (53/91)	50.00% (9/18)	0.5	60.42% (29/48)	18.18% (2/11)	0.01

Conclusions:

A Perc BX is an effective minimally invasive sperm retrieval technique for couples with obstructive azoospermia. Adequate sperm was retrieved in 100% of cases and, when needed, was available for subsequent IVF attempts. In couples with a female age of <37, cryopreserved sperm demonstrate similar pregnancy and clinical pregnancy rates to those cycles utilizing fresh sperm. We advise patients undergoing a Perc BX due to obstructive azoospermia to cryopreserve excess testicular tissue. In doing so, it can effectively be used for future IVF attempts, increase the couples success of achieving one or more pregnancies and avoid undergoing a secondary sperm retrieval procedure.

Support:

None