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# Effect on Clinical Outcome of the Interval Between Collection of Epididymal and Testicular Spermatozoa and Intracytoplasmic Sperm Injection in Obstructive Azoospermia

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We wished to determine whether the interval between surgical retrieval of epididymal and testicular spermatozoa in obstructive azoospermia and their subsequent use in intracytoplasmic sperm injection (ICSI) has an effect on their fertilizing capacity and pregnancy rates in patients undergoing ICSI. This was a retrospective review of 164 consecutive cycles of ICSI in partners of men undergoing surgical sperm retrieval for obstructive azoospermia. Seventy-three cycles used fresh testicular spermatozoa; in 35 cycles ICSI was performed within 4 hours of sperm retrieval, and in 38 cycles spermatozoa were incubated overnight before ICSI. Epididymal spermatozoa were used in 29 cycles; 22 cases within 4 hours of retrieval and 7 cases following overnight culture. Cryopreserved testicular and epididymal spermatozoa were used in 42 and 20 ICSI cycles, respectively. Fertilization and clinical pregnancy rates were calculated for each treatment group. Fertilization rates for epididymal spermatozoa were 67% at 4 hours, 56% at 24 hours, and 63% for cryopreserved spermatozoa ( $P = .52$ ). Fertilization rates for testicular spermatozoa were 63% at 4 hours, 71% at 24 hours, and 60% for cryopreserved spermatozoa ( $P = .16$ ). Unlike testicular spermatozoa, cryopreserved epididymal spermatozoa showed a significant increase in clinical pregnancy rates with cryopreservation, with rates of 4 of 22, 1 of 7, and 10 of 20 at 4 hours, 24 hours, and cryopreservation, respectively ( $P = .049$ ). This study confirms that fertilization and pregnancy rates following ICSI with motile spermatozoa are unaffected by the duration between surgical retrieval of spermatozoa and their injection into oocytes. It also demonstrates that of all treatment modalities, the use of frozen epididymal spermatozoa was associated with the greatest pregnancy rates.

Key words: ICSI, fertilization, pregnancy, surgical retrieval

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