
Objectives: Intra Cytoplasm Semen Injection has reached more than 40% of the French IVF activity. However, many questions are still opened concerning its consequences on the fetus and newborn health, particularly when semen was obtened after surgical procedure.

Design: A large prospective cohort was selected from the French IVF register Fivnat, and followed until birth of the conceived babies.

Patients and Methods: All the ovum pick-up (OPU) realized from 1994 to 1997, using semen obtained from the epididymis or the testis and registered in Fivnat were selected (2388 ICSI resulting in 570 pregnancies). Then, cycles using frozen semen were then excluded. Thus 2 groups were constituted according to the semen origin, epididymal (group A, n=1108) or testicular (group B, n=670). The groups were compared for the main infertility and cycle characteristics and for newborn health.

Result: There was no difference between the 2 groups in age (respectively 31.5 ± 4.4 and 32.0 ± 4.5 for women and 35.3 ± 6.6 and 35.9 ± 6.5 for men). The total dose of gonadotropin was the same for the 2 groups. The number of injected oocytes was higher in group A compared to group B (respectively 8.9 ± 5.3 and 7.7 ± 4.8, p=0.001). The fertilization rate and the number of fertilized embryos were lower in group B (respectively 47.6% and 3.6 ± 2.8, vs. 53.9% and 4.3 ± 3.0). However, the number of transferred embryos was not statistically different (respectively 2.56 ± 0.87 and 2.54 ± 0.96), and the same was true for the per OPU clinical pregnancy rate (23.8% vs. 22.1%), the delivery rate per pregnancy was lower in the testicular group (72.1% vs. 83.8%, p<0.05), because of an increase in spontaneous and medical abortions and in ectopic pregnancies. There was no significant difference in multiplicity, in prematurity, in low birthweight and in perinatal mortality. The proportion of babies with malformation or genetic abnormality was slightly higher compared to conventional IVF or to ICSI with ejaculated semen (3.8% vs. 2.0% and 2.8%), and there was no significant difference between the 2 groups. There was no specific abnormality.

Conclusion: ICSI with testicular semen was associated with a lower fertilization rate and a higher premature pregnancy termination. The proportion of babies showing a malformation or a genetic abnormality was slightly increased in the 2 study groups, compared with conventional IVF or ICSI with ejaculated semen. However, the numbers were still too low to get certitude and there is still a need for further evaluation.