(19.4%), over fresh testicular spermatozoa (46.3%) to frozen–thawed testicular spermatozoa (62.2%). In the ejaculate group, the fertilization rate was similar to that for normal (75.2%) and subnormal (71.6%) spermatozoa. Injecting defective spermatozoa (irrespective of their origin) resulted in a much lower fertilization rate: 486/834 or 58.3%. Spermatozoa with elongated heads or a cytoplasmic droplet performed only moderately worse than normal-looking spermatozoa (63.4% and 62.4% fertilization respectively). Worst fertilization results were obtained with spermatozoa with an amorphous head or a broken neck (59.6% and 34.8% fertilization respectively). In contrast to fertilization, embryo cleavage quality or speed is not affected by the morphology of the injected spermatozoon.

Conclusion: Individual sperm morphology assessed at the moment of ICSI correlates well with the fertilization outcome of the procedure. Poorest results are obtained with spermatozoa having an amorphous head or a broken neck. Once fertilization has occurred, the embryonic development is not affected by the morphology of the injected spermatozoon.

14.45–15.00

O-143. Oocyte activation before intracytoplasmic sperm injection does not improve the fertilization and embryo quality

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Objective: During oocyte activation, typical calcium signal takes the form of oscillations. Intracytoplasmic sperm injection (ICSI) is associated with a slightly different pattern of calcium oscillations in comparison with normal fertilization. It is suggested that sperm cytosolic factors play a role of oscillator, modulating the properties of the oocyte's intracellular calcium stores. The trigger, which normally occurs during sperm oocyte interactions at the level of their respective cell surfaces, can be supplemented in the conditions of ICSI by an artificial calcium influx generated by the procedure itself. Therefore, as a method, a primary assisted activation of human oocytes before ICSI can be beneficial for fertilization and cleavage rates in assisted reproductive technologies (ART).

Materials and method: Eighteen ICSI treatment cycles, performed to alleviate severe male-factor infertility, were analysed prospectively. Oocyte collection was performed after 36 h of human chorionic gonadotrophin administration. The cumulus–corona–cell complexes were removed by 80 IU/ml hyaluronidase (Sigma, USA). Obtained metaphase II oocytes were divided into two groups, activated and unactivated in the same patients. A total of 117 oocytes were used for activation procedure first, and then ICSI was performed (group I), while 194 oocytes were used for ICSI only (group II). Oocytes were placed in droplets of HEPES buffered-Gamete 100 medium (Scandinavian IVF Science, Gothenburg, Sweden), for activating procedure and the injecting pipette was introduced across the zona pellucida and cytoplasm. A small part of cytoplasm was aspirated as cytoplasmic breakage was observed and then the aspirated cytoplasm was injected into the oocyte. The injecting pipette was withdrawn gently and the oocytes were placed into IVF 50 culture medium (Scandinavian IVF Science, Gothenburg, Sweden) for 15 min for incubation.

Both groups were observed for the presence of pronucleus formation 16–18 h after ICSI. Embryo quality and cleavage rates were analysed after a 48 h of in-vitro culture in two groups

Results: A total of 311 metaphase II oocytes were injected: 117 from group I, 194 from group II (Table I). The fertilization rates obtained were 68 and 70% respectively ($P > 0.05$) (using the χ^2 test). The proportion of good-quality embryos (GI) were 48% in group I and 53% in group II ($P > 0.05$).

Table I. Fertilization rates and embryo grades in activated and non-activated groups

	Activated (n = 117)	Non-activated (n = 194)	P
2PN	78 (68)	136(70)	> 0.05
Unfertilized	32 (28)	54 (28)	> 0.05
Abnormal fertilized	7 (4)	4 (2)	> 0.05
Grade I embryos	37 (48)	72 (53)	> 0.05
Grade II embryos	27 (35)	41 (30)	> 0.05
Grade III embryos	12 (15)	20 (15)	> 0.05

Percentages shown in parentheses.

Conclusion: No statistically significant differences were observed between activated and non-activated oocyte groups with regard to fertilization and embryo grade. The results suggest that performing an activation method before ICSI does not improve the fertilization rate and embryo quality.

15.00–15.15

O-144. Analysis of babies conceived by ICSI. Comparison with babies born after conventional in-vitro fertilization or natural conception

Fivnat presented by Rossin-Amar B., Safi A., Pouly J.L. and de Mouzon J.

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Introduction: More and more babies are conceived by intracytoplasmic injection (ICSI), probably 3000 in France for the year 1998. There are still unanswered questions about the consequences of those techniques on the conceptus, particularly concerning the malformation rate. Moreover, there are not many comparisons between ICSI babies and babies born after conventional IVF or natural conception. So we decided to use the French Fivnat register on IVF to analyse this problem, and to compare the malformation rates with those of a French register on malformations.

Patients and methods: Since January 1986, most of the cycles treated for in-vitro fertilization have been registered in the Fivnat study on an individual basis. The register also includes data on the pregnancy and the newborn. For this analysis we

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