



在顯微注射前確認卵子紡錘體的位置對後續胚胎的受精與分裂之影響

Influence of Poloscope oocyte meiotic spindles visualization on the outcome of IntraCytoplasmic Sperm Injection (ICSI)

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Study Question

Does evaluate the meiotic spindles influence the outcome of intracytoplasmic sperm injection (ICSI) in human oocytes? Also, is the result related to female age?

Study Design, Size and Duration

This is a retrospective study included 226 metaphase II oocytes from 45 infertile women at Chi Mei Medical Center between September 2018 and May 2019.

Materials, Settings and Methods

The study group included oocytes of which the position of meiotic spindle was confirmed before ICSI. The oocytes underwent ICSI without visualize the spindle view in advance were in the control group. The subjects were further divided into two subgroups according to the age of women from which the oocytes were obtained: oocytes from women < 40 years old and oocytes from women ≥ 40 years old. The fertilization rate (number of fertilized oocytes/number of metaphase II oocytes) and cleavage rate (number of cleavage oocytes /number of fertilized oocytes) were analyzed. Fisher's exact test was used for statistical analysis and p value < 0.05 was considered statistically significant.

Main Results

A total of 226 metaphase II oocytes were analyzed. There were 107 oocytes had spindle position confirmed before ICSI and 119 oocytes without. The fertilization rate (72.8% vs 71.4%) and cleavage rate (96.2% vs. 94.1%) were similar between oocytes with spindle position confirmed and oocytes without spindle confirmed before microinjection. Among the 189 oocytes from women < 40 years old, 84 oocytes underwent spindle position confirmation and 105 oocytes did not. There was no significant difference in fertilization rate (72.6% vs. 71.4%) and cleavage rate (95.1% vs. 94.7%). There were 37 oocytes from women ≥ 40 years old, among which 23 oocytes had spindle position confirmed and 14 oocytes did not. There was no significant difference in fertilization rate (73.9% vs. 71.4%) as well, whereas, there was a trend of higher cleavage rate for oocytes with spindle position confirmation before ICSI (100.0% vs. 90.0%).

Conclusion

Even though the fertilization rate was almost the same, the cleavage rate seems to be better for women older than 40 years whose eggs received Polscope examination before ICSI. However, the study numbers were too small, further studies are needed to confirm the results of our findings.

	oocytes with spindle confirmation	oocytes without spindle confirmation	P value
Fertilization rate			
Total	72.8% (78/107)	71.4% (85/119)	NS
<40 y/o	72.6% (61/84)	71.4% (75/105)	NS
≥40 y/o	73.9% (17/23)	71.4% (10/14)	NS
Cleavage rate			
Total	96.2% (75/78)	94.1% (80/85)	NS
<40 y/o	95.1% (58/61)	94.7% (71/75)	NS
≥40 y/o	100.0% (17/17)	90.0% (9/10)	NS

