

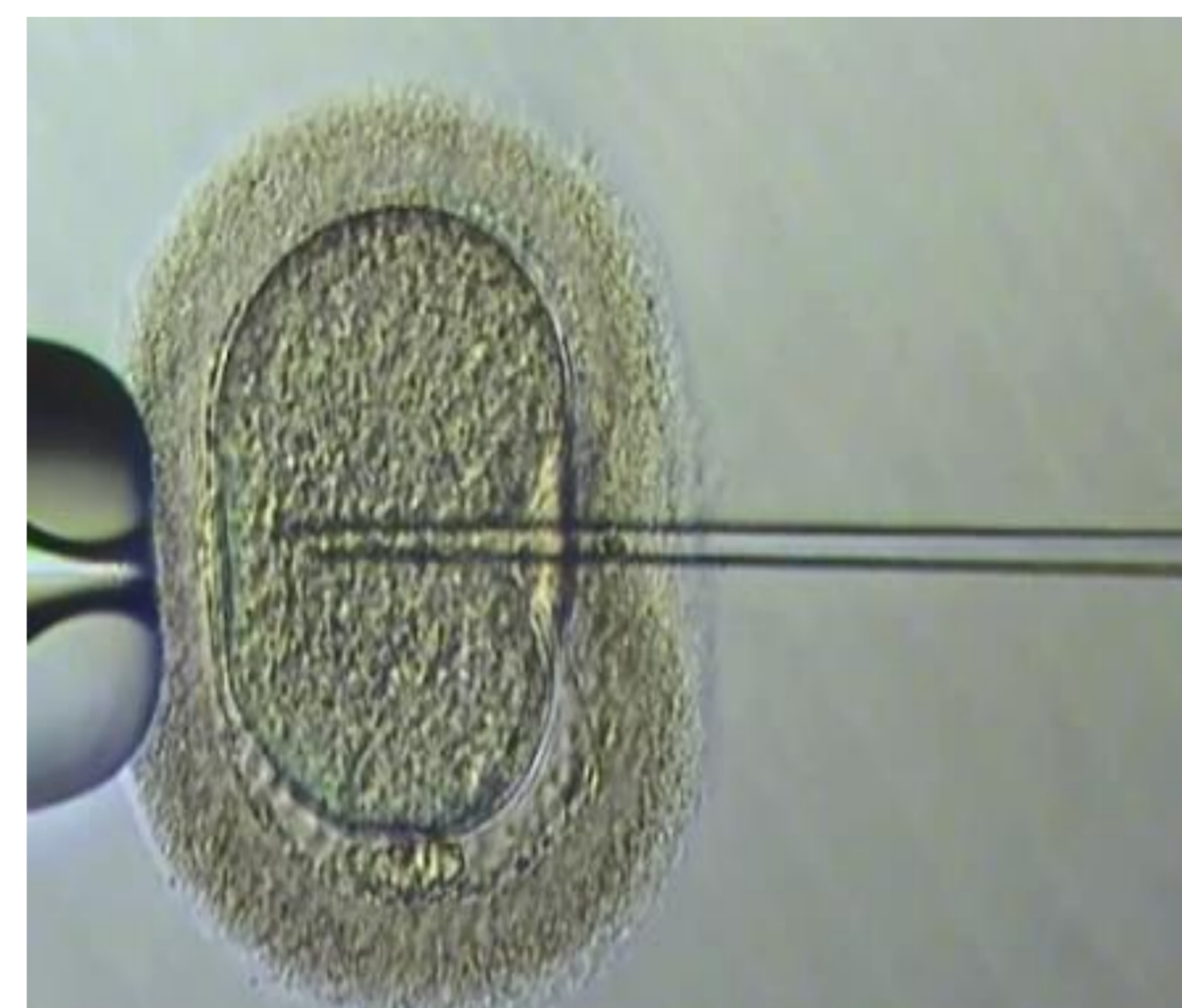
IntegraTI versus Integra3 (I3): a prospective randomised sibling study assessing fertilisation outcome, embryo quality and morphokinetic parameters

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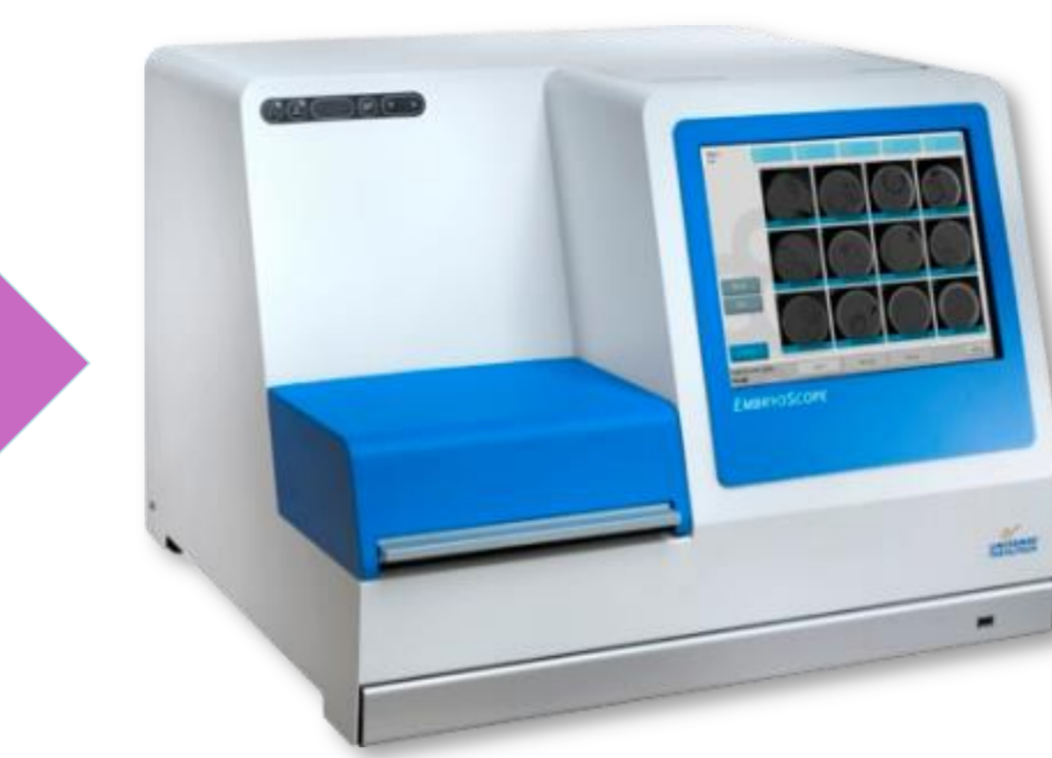
Objective Establish if the use of two different micromanipulation systems (IntegraTI versus I3) had an effect on fertilisation outcome, embryo quality and morphokinetic parameters

Materials & Methods

Oocytes from each patient were randomly split to be injected either using the I3 or the IntegraTI. Practitioners interchanged between the two systems in a balanced 2x2 factorial design.



Practitioner A vs Practitioner B



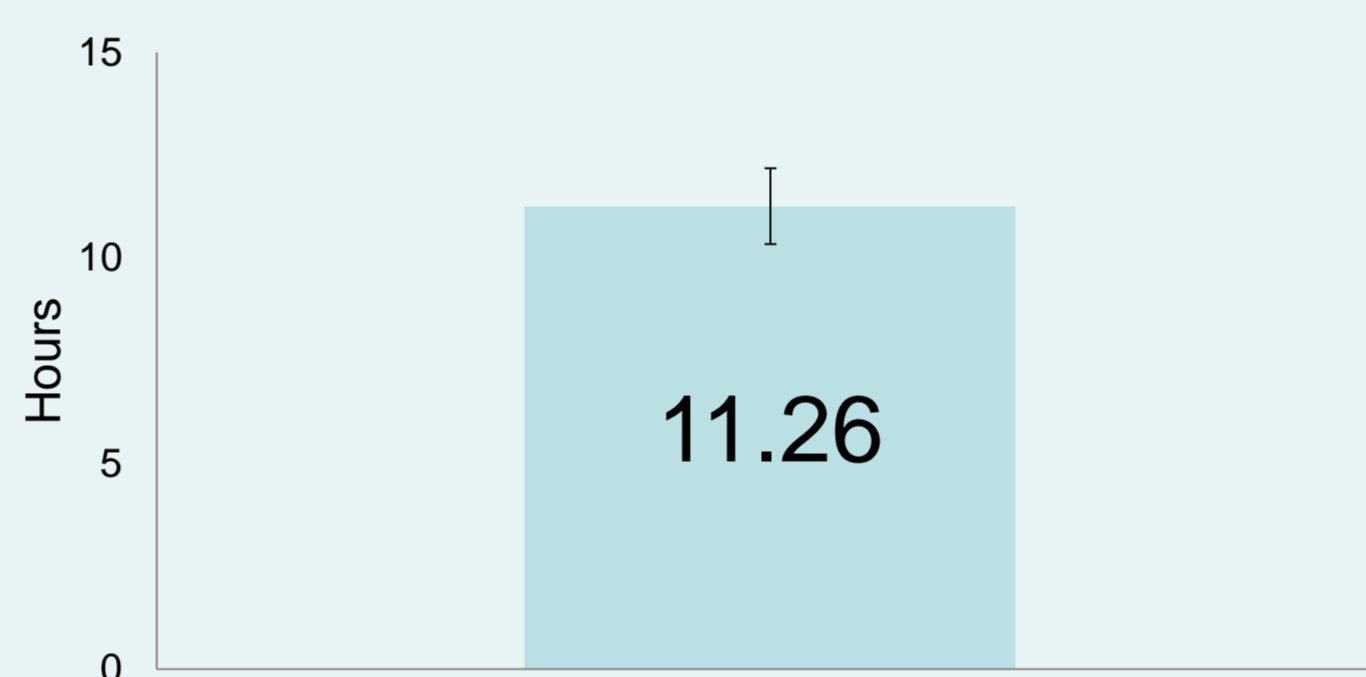
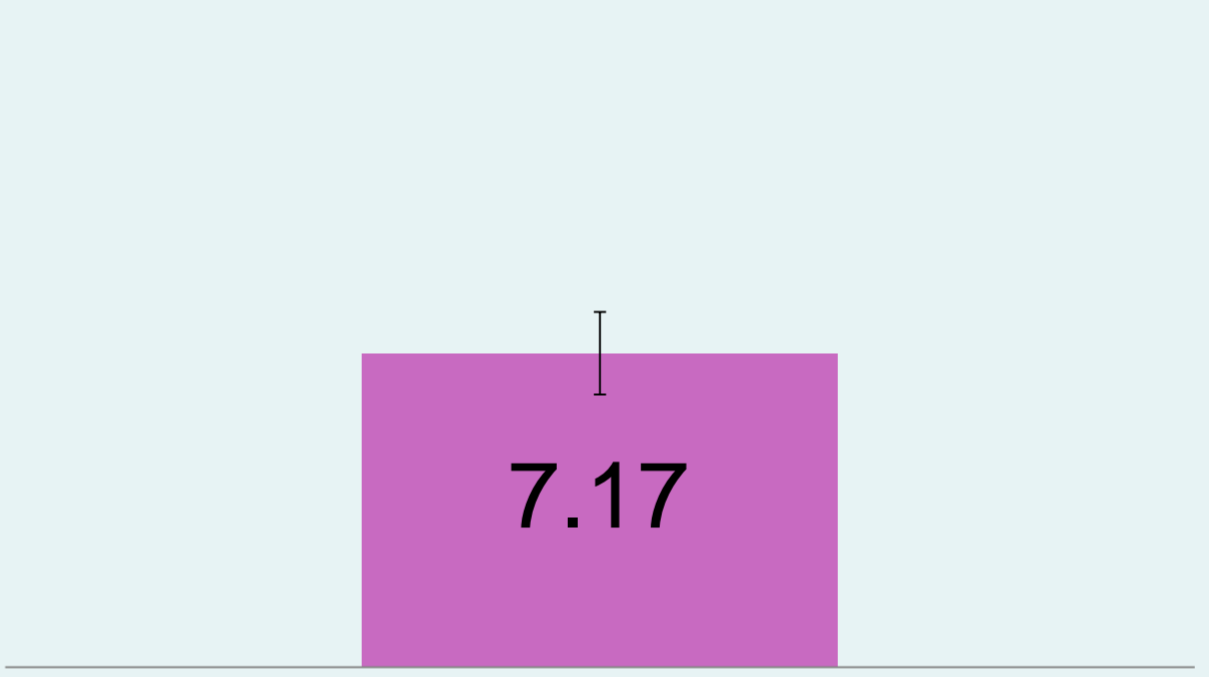
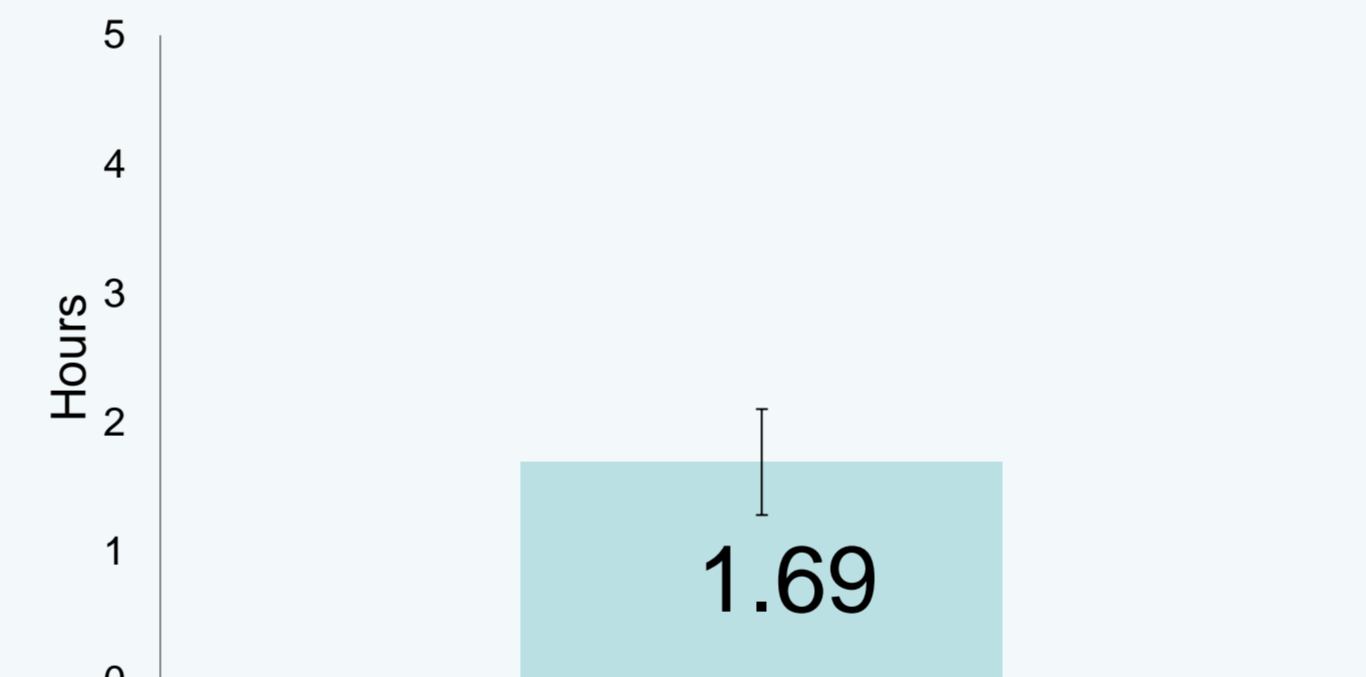
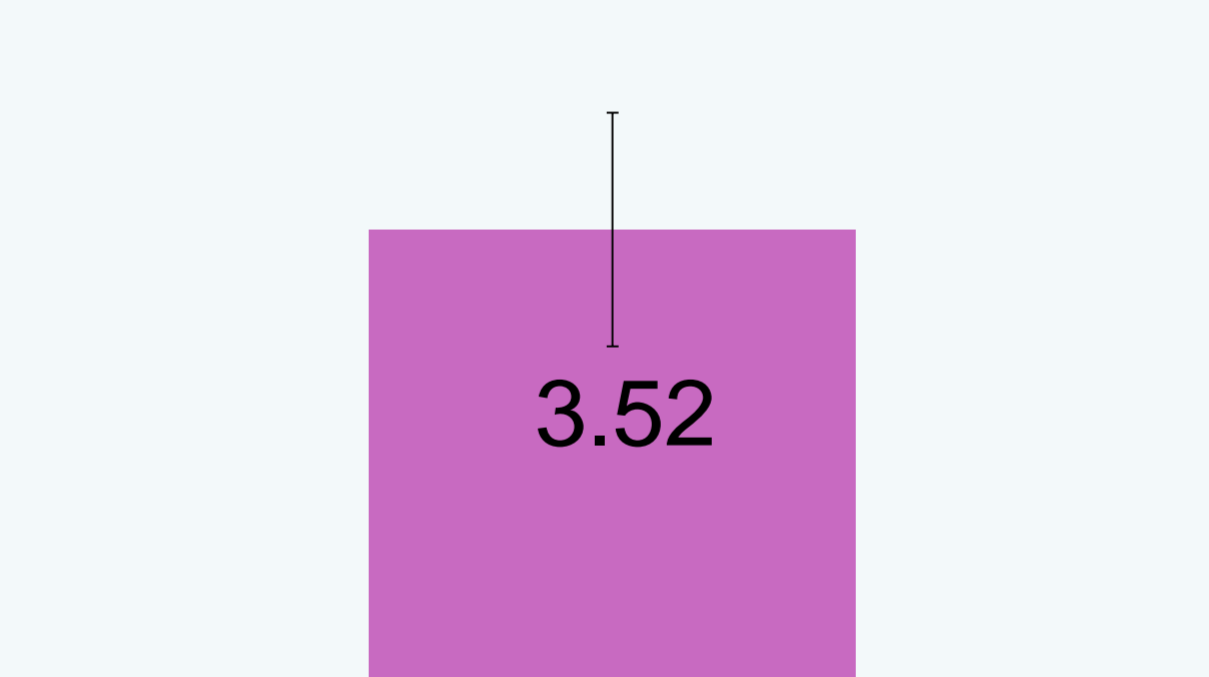
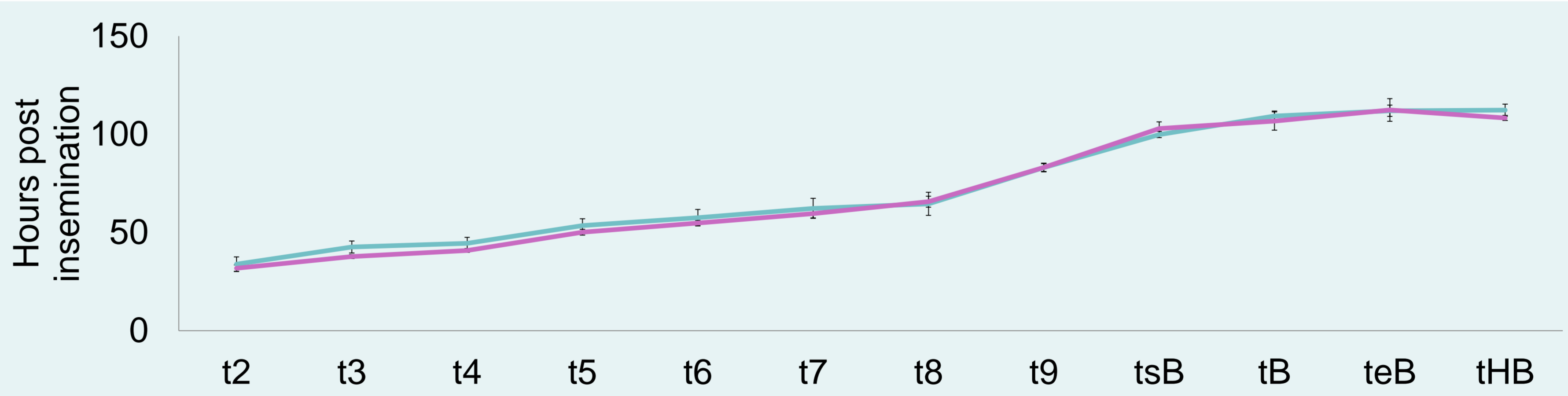
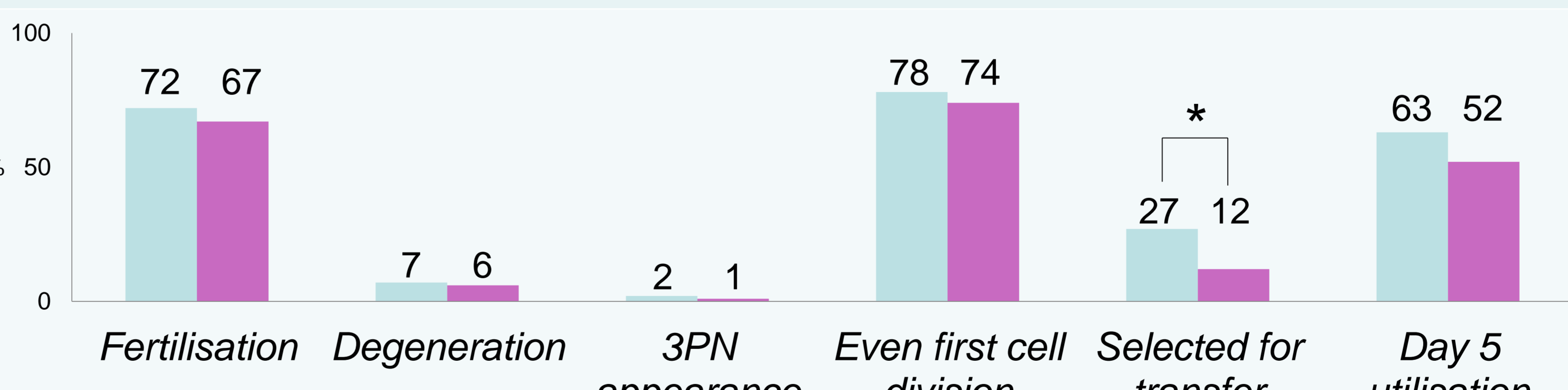


Day 0 → embryos blindly selected for transfer

Performance Indicators
Categorical data assessed using Chi-squared test

Morphokinetics
Continuous data analysed using a generalised linear model (patient as random factor)

Results

	 Integra 3™	 Integra TI™	Statistical significance
Total number of oocytes injected	82	78	
Practitioner A/Practitioner B	44/38	42/36	Not significant
Second cell cycle duration (CC2)			P=0.004
Second cell cycle synchrony (S2)			Not significant P=0.06
Morphokinetic parameters			Not significant
Performance Indicators			Selected for transfer p<0.05 Other PIs not significant

This study has a power of 0.8 for detecting 12% difference in fertilisation rate. To detect a 5% difference, the analysis of 253 patients is required. Extending the study to assess effects at the clinical outcome level would be beneficial.

Discussion

This study suggests that differences in ICSI technique between the two practitioners assessed do not affect performance indicators or embryo morphokinetics

ICSI equipment, however, can have an effect on embryo development (the proportion of I3 embryos selected for transfer being two times higher compared to IntegraTI embryos) and morphokinetics (I3 embryos had a longer CC2 compared to IntegraTI embryos). The time to reach cell stages from two cells to hatching blastocyst were not significantly different between the two systems and none of the other PIs assessed were significantly affected by the practitioner or equipment.

Conclusion

This study not only validates the I3 as performing at least equal to the established IntegraTI system, but also demonstrates that ICSI equipment can have an effect on embryo morphokinetic development.