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Time lapse (TL) culture can improve blastocyst development when compared to non-TL incubators.

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PURPOSE & OBJECTIVES

To evaluate the blastocyst development rate in TL incubation and to compare with two other models of benchtop IVF-specific non-TL incubators in order to determine if the undisturbed culture in TL offers an improvement in blastocyst development.

MATERIAL & METHODS

During the period from January 2023 until December 2023, 8323 zygote embryos, from fresh autologous IVF cycles, were cultured in three different incubator types; two different benchtop models and one TL model. Cycles were distributed depending on available incubator space; however, some cycles were specifically prescribed TL culture due to previous failed cycles. The culture media system was the same in all three groups. Total blastocyst rate was defined as the appearance of a blastocyst regardless of the quality on day 5 or 6 of culture over the number of 2PN zygotes. Usable blastocyst rate was defined as the total number of cryopreserved and transferred embryos on day 5 or 6 over the number of 2PN.

Live birth is not the only important measure of the impact of a treatment or technique.

These data suggest that the use of TL culture improves the blastocyst development rate and thus increases the potential number of available usable blastocysts, which in turn may increase cumulative PR.

RESULTS

	Embryoscope	IVF benchtop incubator 1	IVF benchtop incubator 2
Average patient age	37	35	36
Average attempt #	2	1	1.75
Average #MII	9	12	9
Average # 2PN	7	9	6
Total blastocyst rate	69%	66%	66%
Total usable blastocyst rate	46%	41%	41%

RESULTS

There was a significantly higher blastocyst rate (p=0.0001) and usable blastocyst rate (p=0.003) in the timelapse incubator when compared to culture in the benchtop IVF incubators.

CONCLUSIONS

There continues to be controversy surrounding whether culture in TL incubators increases live birth rate. However, it can be argued that clinically and from patients' perspective other measurements can be also important. In these data, despite a tendency for cycles in the TL being slightly older patients with more attempts, we showed an increase in the number of blastocysts available. This increase could potentially lead to an extra FET cycle or another chance at a euploid embryo from PGT-A.

REFERENCES

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CONTACT INFORMATION