

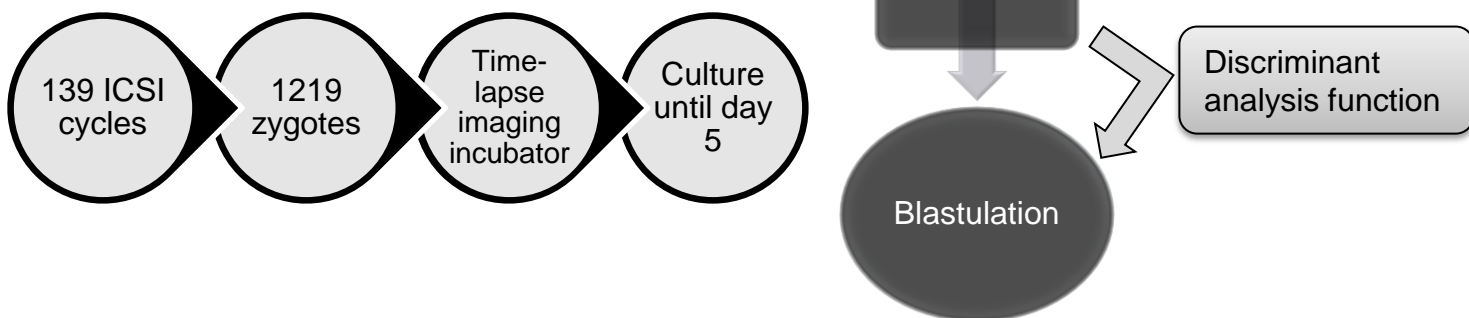
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WHAT IS KNOWN ALREADY

Embryonic genome activation (EGA) occurs after the 8-cell stage, followed by the developmental control switching to the nuclear genome. Studies have suggested that morphological grade is not accurate enough to predict the developmental potential. Most embryos reach the cleavage-stage, regulated by maternal factors, and EGA never occurs. Extended embryo culture and transfer at blastocyst stage is an alternative which allows the selection of embryos at more advanced stages, after EGA, increasing the implantation rate and minimizes the multiple pregnancies risk.

MATERIALS AND METHODS



Cut-off points were established halfway between the averages that were significantly different between the blastocyst and non-blastocyst embryos

RESULTS

563 blastocysts (46.15%)

Discriminant function correctly classified 76.1% of original cases*

* Best predicting blastocyst formation (95.0%)

75.9% of overall embryos were correctly classified in the cross-validated classification

| Kinetic markers | Blastocysts | Non-blastocysts | Cut-off |
|-----------------|---------------|-----------------|---------|
| t2 | 25.29 ± 3.19. | 27.26 ± 5.33 | 26.27 |
| t7 | 54.21 ± 8.40 | 57.34 ± 11.62 | 55.78 |
| s2 | 1.43 ± 2.69 | 3.24 ± 4.64 | 2.34 |
| s3 | 8.48 ± 7.84 | 13.75 ± 10.05 | 11.12 |

Table 1. Significant differences observed in kinetic markers from blastocyst and non-blastocyst embryos

CONCLUSION

Early kinetic parameters may predict which embryo is able to develop into blastocysts and those failing to blastulate. The identification of markers of the blastocyst formation potential may lead to the benefits of the extended embryo culture without exposing the embryo to the deleterious effects of the in vitro culture for an extended period of time (i.e. epigenetic changes in trophectoderm cells leading to abnormal implantation and placentation).