BLASTOCYST REBIOPSY OUTCOMES AFTER AN INTIAL INCONCLUSIVE PGT-A RESULT BASED ON THE DAY OF INITIAL BIOPSY

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INTRODUCTION

- Despite technological advancements in preimplantation genetic testing for aneuploidy (PGT-A) platforms, some embryos fail to yield a conclusive result after trophectoderm biopsy for PGT-A
- Previous studies have shown that re-biopsy of initially inconclusive embryos can identify usable blastocysts.
- However, little is known about whether the chance of identifying a euploid embryo on re-biopsy is modified based on the day of initial biopsy (day 5, 6, or 7)

OBJECTIVE

The objective of this study is to assess outcomes of repeat biopsy on embryos with initial inconclusive results and to determine if the proportion of inconclusive results differs based on day of biopsy (5, 6, or 7).

METHODS

- Retrospective cohort study
- All embryos that underwent PGT-A testing and received an initial inconclusive result, on day 5, 6, and 7 from autologous cycles of patients aged 30 to 44 years old between January 1, 2021, and December 31, 2022, were collected
- Exclusion criteria: Blastocysts of patients undergoing PGT for structural rearrangements or monogenic disorders
- All trophectoderm biopsies were analyzed in a single laboratory using the NextGen Sequencing (NGS) platform
- Repeat biopsies were performed at the same embryology laboratory as the initial biopsy using standard biopsy technique and the cells were sent to the same genetics laboratory as the initial biopsy
- Chi-square test was used to evaluate whether there was a statistically significant association between the day of biopsy and the likelihood of reclassification as euploid with a p-value of <0.05 was considered statistically significant

RESULTS

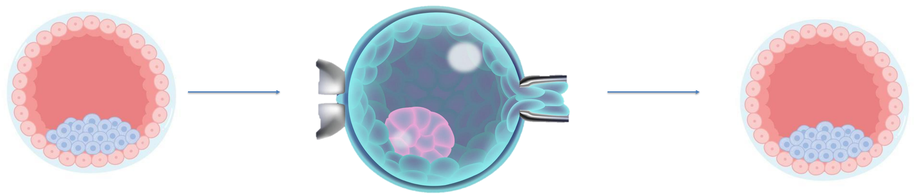

Table 1. Rebiopsy PGT-A results by day of biopsy

	Normal	Abnormal	Mosaic	No Survival	Inconclusive	Total
Day 5	41 (44.1%)	36 (38.7%)	12 (12.9%)	2 (2.1%)	2 (2.1%)	93
Day 6	48 (38.7%)	70 (56.4%)	6 (4.8%)	-	-	124
Day 7	4 (36.3%)	7 (63.6%)	-	-	-	11
Total	93 (40.8%)	113 (49.6%)	18 (7.9%)	2 (0.89%)	2 (0.89%)	228

CONCLUSIONS

- Our study revealed a 41% chance of euploidy after repeat biopsy of an initially inconclusive result
- Rate of euploidy was not found to be statistically different between day of biopsy on repeat results (p=0.7), although this may be due to the small sample size
- The risk of thaw failure was 1%, substantially lower than the previously reported rate of 22.6%
- These results underscore the importance of considering re-biopsy in cases of inconclusive initial PGT-A results, regardless of day of embryo freeze