学位論文審査結果の要旨

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（学位論文審査の結果の要旨）

Conditions for improved accuracy of noninvasive preimplantation genetic testing for aneuploidy: Focusing on the zona pellucida and early blastocysts

【主論文審査結果の要旨】

著者らは論文において下記の内容を述べている。

Purpose: Recently, noninvasive preimplantation genetic testing for aneuploidy(niPGT-A) using cell-free deoxyribonucleic acid has been developed; however, there are few reports on this and the results are inconsistent. This study was conducted to optimize the cultural environment.

Methods: We used 35 blastocysts that had been discarded after in-vitro fertilization. The concordance rate of karyotype analysis results between whole embryos (WEs), spent culture mediums (SCMs), and trophectoderms after 8, 16, and 24h of culture was examined. Next, zona pellucida (ZP)-free blastocysts and then early blastocysts were cultured for 24h each.

Results: Regarding the optimal culture times, the concordance rate between WEs and SCMs was 20%, 60%, and 100% at 8, 16, and 24h, respectively. Significant differences were found between 8 and 24h. The concordance rate with ZP cultures was 40.0%, and no significant differences were found. The concordance rate of early blastocysts thawed and cultured for 24h was 40.0%, which was significantly lower than that of day 5 blastocysts.

Conclusions: The optimal culture times for niPGT-A were 24h, and the concordance rate with free ZP was higher. The concordance rate for early blastocysts was low, suggesting that optimization of the conditions may be necessary.

不妊症や切迫流産の原因となり得る染色体異常を検出する niPGT-A の培養方法を検討した論文であり、学術上極めて有益であり、学位論文として価値のあるものと認めた。

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