



Embryos arising from apronuclear (0PN) and unipronuclear (1PN) have similar euploidy rates with those from 2PN and should be considered for transfer

Colin Soon Soo Lee

Alpha Fertility Centre, Malaysia

Abstract

Background: Fertilization assessment is routinely made at 16-18 hours post-ICSI and 18-20 hours post-insemination. However, the absence of pronuclei (PN) during standard fertilization assessment does not necessarily indicate fertilization failure. The aim of this study is to assess the chromosomal status of blastocysts derived from 0PN and 1PN zygotes as well as to assess the clinical outcome after transfer of such embryos.

Methods: In this study, we use microarray comparative genomic hybridisation (MaCGH) or next generation sequencing (NGS) to analyse the chromosomal status of 271 blastocysts (204 from 2PN, 41 from 0PN, 26 from 1PN) obtained from 42 patients who underwent conventional IVF (cIVF) and ICSI cycles with preimplantation genetic testing for aneuploidy (PGT-A).

Results: Euploidy was confirmed in 126 (126/204; 61.8%), 31 (31/41; 75.6%) and 18(18/26; 69.2%) 2PN-, 0PN- and 1PN-derived blastocysts respectively while the remaining 96 blastocysts displayed various chromosomal abnormalities. A Y-chromosome was observed in 0PN-derived blastocysts(19/41; 46.3%) and 1PN-derived blastocysts (13/26; 50%), indicating that sperm had penetrated the oocyte and not due to parthenogenetic activation. Four euploid 0PN-derived blastocysts were transferred to 4 patients and 3 healthy live births were achieved. Four euploid 1PN-derived blastocysts were transferred to 4 patients and 1 on-going pregnancy was achieved.

Conclusion(s): 0PN- and 1PN-derived zygotes can be chromosomally normal and result in healthy live births. Such zygotes should not be discarded but instead be subjected to extended culture with PGT-A to ascertain the chromosomal and ploidy status and be considered for transfer.

Biography

Colin Lee has been in medical practice for more than 35 years and is currently a consultant gynaecologist & fertility specialist, with special interest in Preimplantation Genetic Diagnosis (PGD). Lee is among the most highly sought fertility doctors in the Asia region. He is especially known for high success IVF with PGS, with his clinic now touching an average of 79.5% percent pregnancy success.

Publications

1. Administration of canestan prior to frozen embryo transfer (FET) of euploid blastocysts may improve clinical outcomeadministration of canestan prior to frozen embryo transfer (FET) of euploid blastocysts may improve clinical outcome, 10.1016/j.rbmo.2017.10.076
2. Euploidy rate of day 7 blastocysts derived from in vitro fertilisation (IVF), 10.1016/j.rbmo.2017.10.072
3. Relative amount of mitochondria DNA (MTDNA) in euploid and aneuploid blastocysts, 10.1016/S1472-6483(16)30181-X



European Gynecology and Obstetrics Congress,
February 17-18, 2020 | Paris, France

Author Citation: Colin Soon Soo Lee, Embryos arising from apronuclear (0PN) and unipronuclear (1PN) have similar euploidy rates with those from 2PN and should be considered for transfer, Gynecology 2020, European Gynecology and Obstetrics Congress, Paris, 17-18 February, 2020, pp. 23