

ESHRE 2020 Virtual (5-8 July 2020)

Questions for the speakers

Session 33: Predictors. Technology and processes improving outcomes in andrology

Ooplasm-Mediated Sperm Nuclear Decondensation for Heritable Genome Editing of the Mammalian Male Gamete - June Wang (U.S.A.)

Q: Have you done any analysis to look for off-target effects??

A: Thank you, this is absolutely a concern. We have yet to perform an analysis of off-target and other unintended effects, but we plan to include this in future experiments as we move to sequencing our results.

Q: Why didn't you have a control group of haploid androgenetic embryos, to check the effect of enucleation on embryo development?

A: A great question, thank you. In this preliminary study, our focus was on whether the male genome cloning technique would allow for CRISPR gene editing, and how this editing efficiency compared to that of a previously reported technique of genome editing on embryos. A control group of haploid androgenetic embryos without CRISPR editing would provide a useful comparison for embryo development rates, and we may include this as we continue our research.

A Novel Microfluidics Method for Reliable and Efficient Sperm Sex Selection - Rony Elias (U.S.A.)

Q: How are selected the sperm with low DNA damage in your microfluidics system? Also which test for DNA damage did you use?

A: The microfluidics device is able to select spermatozoa with the highest motility and therefore the lowest DNA fragmentation. We assessed DNA fragmentation using the TUNEL assay and confirmed that the chromatin fragmentation of microfluidics-processed specimens was significantly lower than that of unprocessed, and density gradient-processed specimens.

Effect of microfluidic sperm separation versus standard sperm washing processes on fertilization rates, blastocyst development and euploidy rates among all infertility patients - Glen Adaniya (U.S.A.)

Q: Males were evaluated for sperm DNA fragmentation before using filtering devices or conventional preparation ? If so, which technique did you use?

A: The males in our study were not evaluated for sperm DNA fragmentation prior to cycle initiation.

Q: Do you think the early studies showing large difference were too small? Or something else different?

A: I do think that the numbers are still too small and we are continuing to gather outcome data.

Q: If the effect of selection devices was tested, why did you not use patients with known high fragmentation values?

A: The goal of our study was to see if the use of the microfluidic sperm separation device was useful in an unscreened (in terms of sperm DNA fragmentation) population.

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Not mentioned to whom the question is addressed
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Q: Are there any implications on baby born (female) from TLR-ligated X-sperm? Do you wash away the TLR? If yes, how?

A: Our presented study is preliminary data and there is currently no literature on the clinical use of TLR-ligated spermatozoa in humans. However, no implications were observed on offspring when used in a mouse model. Furthermore, we observed that the effects are reversible after removing the TLR ligand by adding HTF media and centrifuging the specimen.

Q: We know that type of ART (ICSI/IVF) can affect the sex ratio at birth. Have you accounted for that additional bias in your study?

A: Only patients undergoing ICSI with PGT were included in our study, given the decreased sperm concentration post-selection. However, we assessed the X:Y ratio of the spermatozoa, by FISH, before and after selection to confirm that there was no skewing towards either gender in the unprocessed specimens that could affect our results.