ESHRE 2020 Virtual (5-8 July 2020)

Questions for the speakers

Session 71: About how sperm quality and male infertility relate to genetics

The influence of poor semen parameters on embryonic chromosome segregation - Elpida Fragouli (United Kingdom)

Q: Can you comment about the specificity of the PLC zeta antibody you used? For instance, did you use a polyclonal or a monoclonal.

A: We used a commercially available polyclonal anti-PLCζ antibody. The specimen was then labeled with a secondary anti-rabbit IgG antibody.

Q: In the CG men study were there any female factors or pathology or was there only male factors?

A: This study included only female partners that did not present with any factors or pathology that could have affected the clinical outcomes.

Q: How were the super ovulation protocols tweaked in patients with failed fert without PLCzeta (i.e. likely oocyte maturation issue)?

A: The super ovulation protocols were adjusted by allowing for longer time intervals between the hCG trigger, oocyte retrieval, cumulus cell removal, and ICSI. This allows for longer in vivo and in vitro oocyte maturation in the presence of cumulus/corona cells, thus enhancing fertilization rates.

Attributing ICSI Fertilization Failure to the Responsible Gamete - Pak Chung (U.S.A.)

Q: What should we do when 2 pronuclei do not appear after releasing 2nd polar body?

A: Although AGT proved effective in our study group, sperm-related OAD may also be caused by additional factors such as genetic etiologies, including acrosomal dysfunction due to pollutants and drugs (e.g. calcium channel blockers). Moreover, we cannot exclude a combination of sperm- AND oocyte-related OAD in which case both AGT and superovulation modulation may be necessary.

Q: PLC absence by immunostaining always was confirmed by a low MOAT result in all patients / which AB did you use?

A: We used a commercially available polyclonal anti-PLCζ antibody. The specimen was then labeled with a secondary anti-rabbit IgG antibody.
Q: Do you think that the fertilized oocytes in the absence of PLC is due to parthenogenic activation? Did these oocytes developed to blastocyst?
A: Yes, the fertilized oocytes in the sperm-related OAD cohort were monitored by embryoscope and were observed to develop to blastocyst.

Q: The volume of mouse oocytes is much smaller than human oocyte. Have you seen a PLC-deficient human sperm would be capable to activate mouse oocyte?
A: By assessing a large number of patients, we found that those with less than 30% PLCζ yielded consistently low or unobtainable fertilization. Therefore, a normal threshold of ≥30% was used. It is possible that some mouse oocytes can be fertilized by spermatozoa from a PLCζ deficient specimen. However, we cannot be certain that the individual spermatozoa is truly PLCζ deficient at the time of injection.

Q: All the suspected oocyte-related patients obtained a good fertilization after the modified stimulation protocol? or some patients not responded well? Tx
A: The patients in our study with oocyte-related OAD, confirmed by PLCζ assessment, all responded well to the modified stimulation protocol as evidenced by the significantly higher fertilization rate.

Q: Did you investigate the calcium oscillation after injection of sperm with AGT?
A: Since the AGT protocol is carried out at the time of ICSI, we were unable to assess the calcium oscillation. However, the significantly higher fertilization rate after AGT evidences that the proper calcium oscillation patterns were successfully generated.

Q: How were the super ovulation protocols tweaked in patients with failed fert with PLCzeta (i.e. likely oocyte maturation issue)?
A: The super ovulation protocols were tweaked by allowing for longer time intervals between the hCG trigger, oocyte retrieval, cumulus cell removal, and ICSI. This allows for longer in vivo and in vitro oocyte maturation in the presence of cumulus/corona cells, thus enhancing fertilization rates.