

651: Assessing the practice of LuPOR for poor responders: a prospective study evaluating follicular fluid cfDNA levels during natural IVF cycles

Konstantinos Sfakianoudis¹, Petroula Tsioulou², Evangelos Maziotis², Polina Giannelou², Argyro Glava², Sokratis Grigoriadis², Anna Rapani², Andrianos Nezos², Agni Pantou¹, Michael Koutsilieris², Konstantinos Pantos¹, George Mastorakos³, Mara Simopoulou^{2,3}

¹ Genesis Athens Clinic, Centre for Human Reproduction, Athens, Greece

² Department of Physiology, Medical School, National & Kapodistrian University of Athens, Athens, Greece

³ Assisted Conception Unit, 2nd Department of Obstetrics & Gynecology, Aretaieion Hospital, Medical School, National & Kapodistrian University of Athens, Athens, Greece

Objective

This study aims to assess the practice of luteal phase oocyte retrieval (LuPOR) for poor responders, employing evaluation of cell-free DNA in follicular fluid (ff cfDNA) during natural Assisted Reproduction Technology cycles.

Design

A prospective study enrolling patients based on strict eligibility criteria. The levels of ff cfDNA resulting from follicular phase oocyte retrieval (FoPOR) and LuPOR in a single menstrual cycle were associated with the number and maturation status of yielded oocytes, and the number of resulting zygotes following ICSI.

Materials and Methods

A total of 47 women classified as poor responders based on Bologna criteria were detected with a second luteal phase follicular wave. Follicular fluid was collected and prepared for cfDNA extraction. Levels of cfDNA were quantified via real-time PCR employing sets of ALU115 and ALU247 primers. Both primers are associated with necrotic and apoptotic events that are examined employing the ratio Q247/Q115 representing DNA integrity. Statistical analysis was performed using R statistical programming language.

Results

The mean levels of ALU115 were statistically significantly lower during FoPOR when compared to LuPOR (0.79 ± 0.72 vs 1.46 ± 1.59 ng/ μ l, $p=0.02$). Regarding the FoPOR group, a statistically significant positive correlation of serum estradiol levels and ALU115 concentration ($p=0.04$) was revealed. Finally, a statistically significant lower number of retrieved (1.29 ± 0.58 vs 1.09 ± 0.28 , $p=0.02$) and MII oocytes (0.77 ± 0.55 vs 1.08 ± 0.61 , $p=0.02$) was observed when comparing the FoPOR to LuPOR group.

Conclusions

LuPOR reassuringly does not seem to be associated with necrotic events. This study uniquely highlights an aspect of the physiology involved regarding the novel practice of LuPOR, rendering it as a promising approach for poor responders.

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Disclosure

None