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Conference Materials

Maximizing IVF Success: Unleashing the potential of immaturely retrieved oocytes

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URL: https://www.youtube.com/embed/LxO9pHn3vNw

In the video presentation "Maximizing IVF Success: Unleashing the potential of immaturely retrieved oocytes," Ibrahim Elkhatib from the UAE, the group embryology director at Art fertility clinics, leads a discussion on the potential advantages of utilizing immature oocytes in *In Vitro* Fertilization (IVF) treatments. The overarching emphasis is on collaboration between physicians and embryologists across various facets of IVF to enhance outcomes, considering that nationally reported live birth rates have not surpassed 40-50% despite advancements in the field.

Ibrahim Elkhatib highlights that 8-15% of cases involve immature oocytes and underscores the influence of follicle environment deficiencies on their maturation. Maturity rates per cycle are identified as vital indicators of oocyte quality.

The potential of utilizing immature oocytes in IVF treatment is discussed in detail, acknowledging that although this concept is not new, these oocytes tend to exhibit lower competence than mature ones. Delayed maturation can lead to reduced fertilization rates, slower development, and lower implantation and live birth rates. Nonetheless, delayed mature oocytes can progress to the blastocyst stage, albeit not as successfully as immediate mature oocytes.

The video delves into a study on rescue in vitro maturation (IVM) benefits for patients with immature oocytes, encompassing various ages and maturity levels. The study revealed lower fertilization and blastulation rates for delayed mature oocytes than immediate, mature ones, although the euploid rate was similar. Certain patient factors, such as advanced maternal age and lower fertilization rates, were identified as indicators of benefit from rescue IVM.

The complexity of oocyte maturation is elucidated, stressing the multifaceted factors in controlling and regulating this process. The intricate interplay of FSH and LH in follicular growth, ovulation, and maturation is presented, encompassing nuclear and cytoplasmic maturation.

Potential factors influencing the lower success rates in immaturely retrieved oocytes are explored, including vascularization of follicles, the possibility of embryo arrest due to aneuploidy, oversight aging, and sperm DNA fragmentation. The multifaceted nature of oogenesis and the multitude of potential influencing factors are acknowledged.

Strategies to enhance IVF outcomes are discussed, encompassing the augmentation of embryo or metaphase II oocyte numbers in a cycle, especially for patients of older age or lower maturity rates. Optimizing cultural conditions and exploring early maturation triggering in older age women are suggested. The integration of time-lapse technology to monitor oocyte maturation is also proposed, alluding to the practical applications of these findings in improving IVF success rates.

Overall, this video presents insights that can significantly contribute to refining IVF procedures and subsequently enhance success rates, underscoring the ongoing need for collaboration and further research in this domain.

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