9th Yazd International Congress and Student Award on Reproductive Medicine with 4th Congress of Reproductive Genetics

Key Lectures

K-11
Current insights in in vitro maturation of oocyte

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Oocyte in vitro maturation (IVM) is an assisted reproductive technology in which oocytes are retrieved from the antral follicles of unstimulated or minimally stimulated ovaries. IVM involves retrieval of immature germinal vesicle stage oocytes and culture of intact cumulus-oocyte complexes in vitro until the metaphase II stage. Maturation of oocytes includes the nuclear and cytoplasmic maturation of oocytes. Only the oocytes whose nucleus and cytoplasm are matured simultaneously can have adequate fertility and the potential for embryo development.

The in vitro maturation of oocytes is mainly affected by culture conditions. Since the metabolic dynamics and required nutrients are not entirely the same in different stages of follicular development, optimization of each step is needed to achieve a higher maturation rate and better oocyte quality, based on the sequential culture system.

The enrichment of culture media, standardization of the stimulation protocols and management of cytoplasmic maturity are strongly recommended for improved IVM cycles. With the development of IVM technology, the combination of natural cycle IVF with the IVM of immature oocytes can be used as an attractive regimen to promote IVM treatment.