

OVARIAN RESERVE TEST- WHAT WE HAVE LEARNED FROM ART

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As a result of social and behavioral shifts in recent years, many women have postponed childbearing to a later stage in life. The increase in maternal age has both mother and the neonate confront major risks during pregnancy and labor later in life. Furthermore, a large part of this population attempting to conceive will be infertile because of ovarian aging. Although a million of follicles are present at birth, the number of ovarian primordial follicles decline consistently. This loss accelerates until it reaches the age of 12-13 years before menopause, even in the presence of a regular menstrual cycle. However, the number and rate of depletion of follicles are quite variable.

Ovarian aging has been suggested to be the major cause for the decline in fertility and it reflects a decline in both the quantity and quality of the oocytes. The decreased number of follicles and oocytes does not fully explain all of ovarian aging. The quality of oocytes declines simultaneously. The key factor in IVF success is the ovarian response to gonadotropin stimulation and follicular development. Women with low oocyte yield after controlled ovarian stimulation will have a lower pregnancy rate after IVF. This response reflects “ovarian reserve”. Ovarian reserve means current supply of oocytes of a women and it is closely associated with reproductive potential. If the number of remaining eggs in the ovary is greater, the chance for conception in ART will be higher. Failure to respond to controlled ovarian stimulation makes the cycle cancelled and this is common, particularly in older women.

Many tests are used for ovarian reserve test. The goal of these approaches is to provide information regarding oocyte quality and quantity. Ideal screening test for ovarian reserve should capture all patients who are infertile (high sensitivity), and should correctly identify those patients who are fertile (high specificity). The ovarian reserve tests can be classified into two groups, passive testing and dynamic testing. Hormonal markers and ultrasound parameters have been used to attempt to estimate ovarian reserve, and to predict which patients are likely to be poor responders and to have poor chance of success in ART. Candidate markers of ovarian reserve are age, basal FSH, basal estradiol, inhibin B, anti-Müllerian hormone (AMH), provocative tests, ovarian biopsy and ultrasound parameters including antral follicle count, ovarian blood flow and ovarian volume. However, no single test provides sufficiently accurate answer.

Therefore, clinicians should consider interpretation of ovarian reserve tests and apply with caution. Ovarian reserve tests are generally reliable, but they can also mislead. Abnormal results of test do not preclude possibility of pregnancy. It should not be used to deny treatment and should only be used to obtain prognostic information. Further studies are needed for the proper interpretation of candidate tests and the development of new techniques. This approach may reduce the cycle cancellation, resource wastage and emotional stress of the patients, and it may ultimately result in acceptable pregnancy rates.