

## Complete Oocyte Maturation Arrest in ART Cycles

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### Abstract

**Introduction:** In assisted reproductive techniques (ART), ovarian hyperstimulation drugs are used to retrieve several mature oocytes. International studies report that complete absence of MII oocytes known as “complete oocyte maturation arrest (COMA)” is a very rare phenomenon. The main objective of this retrospective study was to evaluate the ART cycles with COMA along with results from the subsequent treatment cycles.

**Materials and Methods:** A total of 38 cases with COMA were evaluated for age of patients, ovulation induction protocols, and number of follicles and oocytes (GV & MI). Three different protocols of short, long and HMG/HCG were administered on patients. Also, type of infertility was divided into male, female and unexplained.

**Results:** The results showed that out of 38 cases, 17 and 7 of the couples were respectively returned for the subsequent treatment cycles. The mean of age for men and women was  $34.2 \pm 3.3$  and  $29.4 \pm 3.1$ , respectively. Also, the majority were diagnosed with female factor infertility (22 cases). 21 women were under 35 years old and the rest were between ages of 35-41. In second and third treatment cycles, the mean number of immature oocyte (GV+MI) was  $3.13 \pm 1.5$  and  $2.9 \pm 0.96$ , respectively. In addition mean number of MII oocytes were increased from 0 in first to  $2.06 \pm 1.3$  in second and  $2.02 \pm 0.7$  in third cycles. HMG/HCG protocol was in direct relation with the lowest rate of immature egg retrieval. The results also showed that older women ( $>35$ ) had the highest rate of immature oocytes.

**Conclusion:** the results indicate that the prevalence of COMA is very high in our patients which could be related to the women's age. However, the COMA was reduced in patients who were returned for the second or third times for ART treatments. This may show that extrinsic factors related to the ovulation induction protocol and Induction drugs such as the type, manufacturing company, purchasing, and preservation could be the main cause in COMA taking place in some of our cases.

**Key Words:** Infertility, Assisted Reproductive Technology (ART), Ovarian stimulation, Immature Oocyte, Oocyte maturation arrest.

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