MYO-INOSITOL: OVARIAN STIMULATION AND IVF OUTCOMES
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Objective: More than 60% of in vitro fertilization (IVF) cycles do not result in pregnancy. Several studies have been carried out in order to identify factors affecting the IVF outcome. The main factors influencing IVF outcome are oocyte and embryo quality. Indeed, the only way to improve IVF success rate is to improve oocyte and embryo quality. Interestingly, while an inverse correlation was found between the FSH IU administered and the pregnancy outcome, a positive correlation was found between myo-inositol (MI) concentration in the follicular fluid and oocyte quality. In the present study we aimed to study whether MI treatment is able to improve oocyte, embryo quality and IVF outcome.

Design: Double blind RCT  Materials and Methods: Patients undergoing ICSI procedure were considered eligible for the study. Patients were randomly assigned to two groups; MI treated or placebo. Patients assigned to the MI treated group were treated with 4g of MI and 400μg of folic acid (Inofolic, Lo.Li. pharma, Rome or Pregnitude, Everett, West Orange, NJ) for 3 months before starting ovarian stimulation and throughout pregnancy. Patients assigned to placebo group were treated with 400μg of folic.

Results: Total rFSH units (2214±793 vs. 2723.14±1466 IU, P<0.05) and number of stimulation days (11.5±1.8 vs. 12.4±2.3, P<0.05) were significantly reduced in the MI group. Fertilization and cleavage rate were higher in the MI group (73.1% vs. 67%, P<0.01 and 72.4% vs. 87.8%, P<0.01). Furthermore, Grade I embryo were higher in the MI group (72.4% vs. 87.8%, P<0.01); this will likely reflect the increase in biochemical pregnancy rate observed (33.5% vs. 23.5%, P<0.01). Clinical pregnancy showed a positive trend in the MI group (20.5% vs. 18.4%, P=0.06).

Conclusions: MI treatment is able to reduce the number of FSH IU administrated and the stimulation days and to improve fertilization, cleave rate, embryo quality and pregnancy rate. Therefore we conclude that MI treatment should be routinely introduced in IVF protocols.