ROLE OF MYO-INOSITOL AND MELATONIN SUPPLEMENTATION IN FOLLICULAR FLUID OF IVF PATIENTS WITH POLYCYSTIC OVARIAN SYNDROME: A RANDOMIZED CONTROLLED TRIAL

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The most common cause of IVF-ET failure is poor oocyte (OQ) and embryo quality (EQ). Oocyte retrieved from PCOS patients are indeed characterized by poor quality and therefore any treatment able to improve oocyte quality could be considered the “holy grail” for IVF procedures.

Recently, it has been shown that supplementation with myo-inositol (MI), alone or with melatonin (M), is a practical approach to improve OQ and EQ and IVF outcomes in both PCOS and healthy patients.

The efficacy of the treatment it is likely linked to the fact that while myo-inositol is the FSH second messenger, Melatonin have been shown to induce LH receptor expression and progesteron production.

The aim of the study was to test the synergistic effect of MI and M.

PCOS women were randomized into: Group A, 178 patients who received MI (4000 mg), folic acid (400 mcg), and M (3 mg) (Inofolic®plus); group B of 180 patients who received MI (4000 mg) and folic acid (400 mcg) (Inofolic®).

Both investigators and patients were blinded for the treatment.

There were significant statistical differences comparing group A with group B in terms of mature oocytes (48.2% vs 35.0% p=0.008), total units of FSH administered (3443±23 vs 4876±345 p=0.0047) and grade I embryos (45.7% vs 30.4% p=0.0045).

M intrafollicular concentrations were significantly increased after M treatment (213±51 pg/mL vs 69±23 pg/mL). MI and M supplementation during IVF protocols synergistically improve oocyte and embryo quality. Due to our results, we believe that MI and M administration should be routinely performed before an ovarian stimulation.