

## Plasmatic androgens as predictors of ovarian response in ART: a prospective cohort study.

*G Murru (IT) [1], E Garzia (IT) [2], V Galiano (IT) [3], P Sulpizio (IT) [4], A Marconi (IT) [5]*

### CONTEXT

A proper androgens concentration, serving as substrates for FSH-induced aromatization, is essential for regular ovarian response in IVF cycles. Hyperandrogenemic patients have greater chances of hyper-response and ovarian hyperstimulation syndrome. Nevertheless Testosterone plasmatic levels progressively decline, being greatly reduced in aged and poor-responders women. This has been the rationale of androgen supplementation in these patients. Some Authors have already shown that baseline androgens were related to some outputs of stimulation, but these evidences were conditioned by different stimulation protocols and dosages.

### OBJECTIVE

To investigate if baseline plasmatic androgens may predict ovarian response in a population treated with the same stimulation protocol. To compare the androgens prediction efficacy to the available markers of ovarian response.

### METHODS

Prospective non randomized cohort study. Inclusion criteria: women aged 20-42 with regular menstrual cycles. Exclusion criteria: endometriosis, previous ovarian surgery, clinical pathologies.

### PATIENTS

54 women treated with IVF in our ART Center.

### INTERVENTIONS

At inclusion all patients underwent a clinical evaluation and an endocrine/metabolic lab assessment with evaluation of main plasmatic androgen levels, free androgen index (FAI), HOMA and ultrasonographic AFC in early follicular phase. All patients underwent a long protocol: 100 µg Triptorelin from mid luteal phase and stimulation through 150 IU rFSH per day.

### MAIN OUTCOME MEASURES

Output of ovarian response were considered: total follicle number, number of >16 mm follicles and 17-? estradiol plasmatic levels at ovulation induction; total number of oocytes retrieved, mature oocytes number. Data were analysed through linear regression method.

### RESULTS

Baseline plasmatic Androstenedione was clearly related to the total number of follicles ( $p<0.01$ ) and to the number of follicles >16 mm ( $p<0.01$ ). DHEA-S was related to the number of mature oocytes retrieved ( $p<0.01$ ). AFC was shown as the most suitable marker of stimulation and was strictly related to Androstenedione ( $p<0.001$ ).

### CONCLUSIONS

This study underlines a relation between baseline androgens and ovarian response, suggesting a role as integrative predictors of ovarian output of stimulation. Greatest populations studies are needed to develop a multiple markers prediction model of ovarian response, in order to avoid women pointless and frustrating stimulation treatments.

[1] San Paolo Hospital, Milan University, Milan, [2] San Paolo Hospital, Milan, [3] San Paolo Hospital, Milan University, Milan, [4] San Paolo Hospital, Milan University, Milan, [5] San Paolo Hospital, Milan University, Milan