Ovarian hyperstimulation syndrome (OHSS): is it predictable?

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Nowadays, IVF is widely used for the treatment of infertile couples. The outcome of IVF depends greatly on the effectiveness of controlled ovarian hyperstimulation (COH), where exogenous gonadotrophins are used to stimulate multiple follicular development. The response to stimulation varies substantially being difficult to predict. The unpredictable variability in the response to gonadotrophins is a major problem of ART, with responses ranging from poor to high, leading to cycle cancellation and IVF failure or complications related to iatrogenic ovarian hyperstimulation syndrome (OHSS).

Pharmacogenetic studies explain the effects of individual variability on COH outcome and the potential for individualizing therapy based on the patient's genome. In the future it will be possible to tailor the treatment protocol according to the patients' characteristics. Once such a personalized approach is possible, the prediction of the ovarian response to COH will improve, reducing the incidence of treatment cancellations and complications and improving take home baby rates.

However, accurate prognosis of the ovarian response to exogenous gonadotrophins is currently not possible and the search for optimal biomarkers is still in its infancy. Other strategies such as coasting when estradiol levels are high or a large number of follicles have developed and avoiding use of HCG and triggering ovulation with GnRH analogs are being used to prevent OHSS.

Furthermore, the option of aspirating all the follicles (mature and immature) and postponing embryo transfer by cryopreservation almost eliminates the chance of OHSS, although reducing the chance of pregnancy.