Does it matter how we stimulate the poor responder with low functional ovarian reserve?

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Controlled ovarian hyperstimulation (COH) is considered a key factor in the success of in vitro fertilization-embryo transfer (IVF-ET) because it enables the recruitment of multiple healthy fertilizable oocytes and, thereby, multiple- instead of single- ET. However, owing to the extreme variability in ovarian response to COH, this method may yield a very small number of follicles, if any, in a subgroup of patients, who are collectively referred to as "poor responders" (PR). While until the ESHRE Bologna criteria (2011) for PR was established, there was no universal definition of PR, and still, major concerns remain with regard to the degree of heterogeneity and the prognostic impact of the Bologna criteria. Many strategies are offered for the treatment of poor responders and include: increasing the dose of administered gonadotropins, the use of gonadotropin-releasing hormone-antagonist (GnRH-ant), reducing or stopping the dose of GnRH-agonist (GnRH-ag), initiating GnRH-ag and gonadotropins together in the follicular phase (the ultrashort and the short "flare" protocols), the microdose GnRH-ag flare protocol, the co-administration of growth hormone, androgens or letrozole and modifying the mode and timing of final follicular maturation. Nevertheless, no compelling advantage for one stimulation

protocol over another has been hitherto established. Further large prospective studies are needed to elucidate the appropriate COH protocols in poor-responders and to identify the specific characteristics of women (before initiating ovarian stimulation) that will aid both fertility specialists' counseling and their patients.