

Does the co-flare in-vitro fertilization (ivf) protocol change the number of oocytes retrieved for women with diminished ovarian reserve (DOR)?

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Context: Patients with DOR are difficult to treat because of a diminished response to follicle stimulating hormone (FSH). Different IVF cycle protocols have been developed to improve outcomes for these patients. The co-flare (Cof) protocol is designed to increase the amount of endogenous gonadotropins that would lead to greater response to exogenous FSH in patients with DOR. Here we assess if the Cof protocol leads to increased oocytes retrieved in patients with DOR.

Objective: To assess the number of oocytes retrieved from women with DOR using three IVF stimulation protocols.

Methods: A retrospective review of cycles reported to the Society of Assisted Reproductive Technology Clinic Outcome Reporting System (SART CORS) was performed. The three stimulation protocols used for comparison were Cof, agonist suppression (Ago), and antagonist suppression (Ant). The primary endpoint of number of oocytes retrieved on the first IVF stimulation was performed using a Poisson regression. The association between age and BMI was also assessed using a multivariate analysis. Statistical significance was determined if $p < 0.05$.

Patients: Women ages 18 to 50 years who had an oocyte retrieval during 2014 with data reported to SART CORS were analyzed.

Interventions: 7213 patients met criteria for DOR based on an AMH < 0.5 ng/ml or FSH > 14 IU/L. After excluding patients that had undergone a previous IVF cycle and duplicate cycles for 2014, there were 5736 patients to analyze.

Main Outcome Measures: The primary endpoint of number of oocytes retrieved based on stimulation protocol was assessed.

Results: Baseline characteristics were similar for the three protocols. Age among protocols was 36.7 (Cof), 37.2 (Ago), and 37.9 years (Ant). BMI was similar among groups with an average of 26 kg/m². Oocytes retrieved were found to be highest among the Ago protocol with retrieval of 5.5 oocytes compared to 5.0 and 4.0 using the Ant and Cof protocols, respectively. Both Ago and Ant increased the number of oocytes retrieved over the Cof protocol after adjusting for age and BMI (relative risk (95%CI): 1.29 (1.18, 1.44) and 1.17 (1.09, 1.25) respectively, p -value < 0.01).

Conclusions: Using SART data from 2014 we were able to show that the highest number of oocytes retrieved in women with DOR was with the Ago protocol. Although there likely is stimulation variability among patients and cycles, it is reasonable to consider the Ago as an initial protocol in women with DOR.

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