North American Proceedings in Gynecology & Obstetrics

Special Issue
MRSi Abstracts
Summer 2022

Rethinking Follicular Maturation: The Incorporation of Luteal Phase Stimulation In IVf Patients With Diminished Ovarian Reserve

Anisa Hussain, MA[1] ; Jacqueline Sehring, MA[1] ; Lauren Grimm, MA[1] ; Tyler Soy, MS[1] ; Angeline Beltsos, MD[1] ; Roohi Jeelani, MD[1]

1. Vios Fertility Institute

Abstract

OBJECTIVE: Studies suggest that a single ovarian cycle actually consists of several "waves" of follicular maturation. Therefore, the study aimed to optimize ovarian stimulation through the utilization of both follicular and luteal phase stimulation in IVF patients with diminished ovarian reserve (DOR).

DESIGN: Chart review of patients with a diagnosis of DOR was conducted at a multisite fertility practice in the United States. DOR was defined by pre-stimulation AMH level < 1 ng/ml.Patients underwent either DuoStim or Microdose Flare (MDF) protocol. DuoStim protocol consisted of follicular phase stimulation (FPS) by antagonist stimulation protocol, hCG trigger and oocyte retrieval, immediately followed by microdose leuprolide flare with recombinant FSH, hCG trigger, and oocyte retrieval. MDF protocol consisted of one ovarian stimulation cycle with microdose leuprolide and recombinant FSH with hCG trigger, and oocyte retrieval.

MATERIALS & METHODS: Outcomes were quantified as total number of oocytes retrieved, fertilization rate, and total number of embryos frozen per cycle. Outcomes of three cycle types (DuoStim FPS, DuoStim LPS, and MDF cycle) were statistically compared via one-way ANOVA. Unpaired t-test then compared the same outcome parameters between complete DuoStim cycles (FPS + LPS) and MDF cycles. Statistical analyses were performed using Graph Pad, LLC.

RESULTS: Statistical analysis suggested no significant difference in outcome parameters between DuoStim FPS, DuoStim LPS, and MDF groups (p=0.29, p=0.62, p=0.1; see Table 1). There was no significant difference in outcome parameters between a complete DuoStim cycle (FPS + LPS) and MDF cycle (p=0.12, 0.71, 0.74; see table 1). Of note, there was no significant difference in the outcome parameters between DuoStim FPS and DuoStim LPS (p=0.21, 0.22, 0.78; see table 1).

CONCLUSIONS: This study compared cycle outcomes in DOR patients who underwent IVF with DuoStim and MDF protocols. Whereas trends indicated that DuoStim resulted in a greater number of oocytes retrieved than MDF, this trend was statistically insignificant. Further, there was no significant difference in fertilization rate or number of embryos frozen between the two groups. These preliminary results suggest that DuoStim cycles, which can be costly, may not improve cycle outcomes in patients with DOR.

SUPPORT: None.

	Oocytes Retrieved	Fertilization Rate	Embryos Frozen
DuoStim FPS	4.4	0.45	0.40
DuoStim LPS	5.5	0.33	0.60
DuoStim Total (FPS+LPS)	9.70	0.38	0.90
MDF	6.82	0.42	1.08

(Table 1)

Mean number of oocytes retrieved, mean fertilization rate, and mean number of embryos frozen in DuoStim FPS, DuoStim LPS, DuoStim Total (FPS+LPS), and MDF cycles (p-values as noted in Results section).