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INTRAMUSCULAR PROGESTERONE VERSUS COMBINED ORAL AND VAGINAL LUTEAL SUPPORT IN SINGLE EUPLOID EMBRYO TRANSFERS

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Title:

INTRAMUSCULAR PROGESTERONE VERSUS COMBINED ORAL AND VAGINAL LUTEAL SUPPORT IN SINGLE EUPLOID EMBRYO TRANSFERS

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Preferred Presentation Type:

Oral or Poster

Study Type:

Retrospective Cohort Study (includes comparator groups)

Category - Subcategory(ies):

ART: Clinical

ART: Outcomes

Funding:

NA

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ACCME Disclosure

Nothing to disclose. No off-label or otherwise non-approved product use.

Did this abstract require approval by a local Institutional Review Board (IRB) or equivalent?

This abstract has been approved by a local Institutional Review Board (IRB) or equivalent.

Not applying for an award**Abstract Text:**

OBJECTIVE: Exogenous progesterone is essential for endometrial preparation in frozen/thaw synthetic SEET cycles, with IM progesterone commonly used due to its stable serum levels and

association with higher live birth rates. This study compares outcomes in patients using combined oral and vaginal (POPV) versus IM progesterone for luteal support.

MATERIALS AND METHODS: This retrospective cohort study (2012–2024) evaluated pregnancy outcomes in first single euploid embryo transfer (SEET) cycles using either combined oral and vaginal progesterone (POPV) or intramuscular (IM) progesterone for luteal support, excluding patients with endometrial lining <7 mm or oocyte age ≥ 40 . The POPV group received 200 mg oral progesterone three times daily and 100 mg vaginally twice daily; the IM group received 50 mg daily. The primary outcome was ongoing pregnancy/live birth; secondary outcomes included positive pregnancy test, clinical pregnancy, pregnancy loss, and peri-transfer progesterone levels. Outcomes were compared using chi-square and Kruskal-Wallis tests. Multivariate logistic regression with generalized estimating equations adjusted for age, oocyte age, BMI, and endometrial thickness.

RESULTS: This study evaluated 858 patients undergoing FET with POPV progesterone and 5,094 patients undergoing a frozen/thaw SEET with IM progesterone. General demographics and ovarian reserve were comparable between the two groups. Serum progesterone levels were significantly lower in the POPV group compared to the IM group (29.6 ng/mL (21.4-40.0) vs. 25.9 ng/mL (20.4-32.2), $p < 0.0001$). The rate of ongoing pregnancy/live birth was significantly higher in the IM group than the POPV group. Similarly, the rate of positive pregnancy test, clinical pregnancy were significantly higher in the IM group, while clinical pregnancy loss was similar between the IM and POPV groups (Table 1). After adjusting for confounders, the results remained consistent.

CONCLUSIONS: Patients using IM progesterone during frozen/thaw SEET cycles had significantly higher rates of positive pregnancy tests, clinical pregnancy, and ongoing pregnancy/live birth compared to those using POPV. However, pregnancy rates with POPV support suggest it remains a viable alternative for patients unable to use IM progesterone.

IMPACT STATEMENT: This study reaffirms IM administration as the preferred route of progesterone, although use of POPV progesterone remains a viable alternative for those patients who are not candidates for IM progesterone.

	POPV (%)	IM (%)	aOR (95% CI)
Positive Pregnancy Test	74.9	78.5	0.79 (0.67-0.93)
Clinical Pregnancy	62.5	66.6	0.83 (0.71-0.95)
Loss	12.1	11.6	1.09 (0.89-1.35)
Ongoing/Live Birth	51.8	57.5	0.77 (0.67-0.88)

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Biographical Sketch Early success, marked by his first publication in CELL at Harvard Medical School, inspired Joseph to continue his research endeavors in reproductive endocrinology and infertility. Joseph has been with Reproductive Medicine Associates of New York since 2011. Joseph has authored over 400 peer-reviewed abstracts & manuscripts. Passionate about development, he cultivates relationship with investors & entrepreneurs to advance reproductive endocrinology & infertility care.

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Organization Name	Relationship Type	Who has this Relationship?
Progyny	Company Officer Relationship Began - Friday, August 25, 2017 Relationship Ended - Thursday, June 1, 2023 Paid Consultant Relationship Began - Relationship Ended - Direct Stockholder Relationship Began - Friday, August 25, 2017 Relationship Ended - Friday, November 1, 2024	Self

Signature: Alan B Copperman



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