Clinical Pregnancy Results Following Adjustments To Progesterone Dosage Administration For Displaced Window Of Implantation Patients Identified By microRNA Endometrial Receptivity Testing

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Background and Aims

This study aimed to evaluate the clinical results following adjustment of progesterone dosage for patients identified with a displaced window of implantation (WOI) through microRNA (miRNA) profiling of endometrial tissues in frozen embryo transfer (FET) cycles.

Methods

Endometrial tissue samples were initially collected from patients undergoing hormone replacement therapy (HRT) cycles on day P+5 (120 hours after progesterone administration). Thirteen patients with a displaced window of implantation (WOI), as identified by MIRA, a miRNA-based endometrial receptivity analysis, were included in the study. Patients with a pre-receptive WOI received an additional daily progesterone injection by 50 mg, while those with a post-receptive WOI had their Utrogestan progesterone dosage reduced from 800 mg to 400 mg. These adjustments aimed to realign the displaced WOI back to P+5 (120 hours after progesterone administration). In the following month, patients' WOI was reassessed using MIRA to confirm that their WOI had shifted back to P+5, and pregnancy outcomes were monitored for those who proceeded with embryo transfer after achieving a receptive WOI at P+5.

Results

Following progesterone adjustments, all 13 patients (4 post-receptive and 9 pre-receptive) attained a receptive WOI at P+5, as confirmed by a second MIRA analysis. Among them, 8 patients had proceeded with an embryo transfer and resulted in 7 confirmed successful pregnancies, confirmed by a gestational sac under ultrasound. This result suggests a pregnancy success rate of 87.5% with miRNA-guided progesterone adjustments. The remaining patient also achieved a successful pregnancy after surgically removing her uterine myoma.

Conclusion

miRNA biomarkers may serve as effective and personalized indicators for optimizing progesterone dosage in embryo transfer, particularly for patients with a displaced WOI. As 38% of patients in the study have yet to complete embryo transfer, the final success rate may alter with further follow-up.