

PLATELET-RICH PLASMA IN IVF MANAGEMENT FOR POOR ENDOMETRIAL RECEPTIVITY PATIENT: DOES IT WORKS?



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INTRODUCTION

Implantation failure or repeated implantation failure may result from embryo rejection because of the imbalance between maternal endometrium and embryo invasion. Around 70-80% of the transferred embryos are not able to implant, and the main problem is the quality of the endometrium. One of the methods that have been introduced to promote tissue engineering and regeneration is Platelet Rich Plasma (PRP). Failure to achieve pregnancy or repeated canceled Embryo Transfer (ET) due to thin endometrium is devastating for patients. So, every effort should be made to achieve optimal results in IVF management. We presented three cases of patients who underwent PRP treatment in our clinics.

DISCUSSION

The optimal minimal endometrial thickness in the human embryo implantation process is around 7 mm. Thin endometrium will result in a higher risk of cycle cancellation, which can devastate infertile couples. Several studies showed that even though the exact mechanism of PRP in enhancing endometrial thickness and receptivity is still not precise, it is proven to increase endometrial thickness, and many of the patients successfully achieved pregnancy. We are only starting to give PRP treatment to our patients in 2022. So, we still needed to improve our protocol and the patient.

PATIENTS AND METHOD

The first case is a 37-year-old patient with primary infertility, PCOS, and a history of laparoscopic ovarian drilling and curettage due to PCOS and endometrial hyperplasia in 2020. In 2022 she was given a short IVF protocol which resulted in 4 Day 5 embryos, but we decided to freeze all of the embryos due to thin endometrium. The FET was performed on the day when the endometrial line was 1.1 mm from 0.32 cm after two times of PRP administrations. The FET cycle failed with an hCG level of <0.100 mIU/mL.

The second case is a 30-year-old patient with primary infertility and salpingitis tuberculosis. In 2021 she received long protocols in In Vitro Fertilization (IVF), resulting in 5 excellent and two good embryos. We froze all of the embryos, but after two cycles of FET, the endometrium was not receptive to transfer despite all of the maximal regimens. She was given PRP three times and estradiol to stimulate endometrial growth. But we decided to cancel the FET because the maximum endometrial thickness achieved was only 0.45 cm.

The third case is a 38-year-old patient with primary infertility and bilateral hydrosalpinx. She underwent one canceled IVF long protocol, one IVF with a short protocol that resulted in 4 excellent embryos and two good embryos, one cancelled FET due to thin endometrium, and two failed FETs. FET was performed when the endometrium reached 1.01 cm after two doses of PRP. Pregnancy is achieved in this patient with an hCG level of 389.7 mIU/mL.

CONCLUSION

PRP is a promising therapy to treat thin endometrium. However, it is not helpful in some cases, especially when massive endometrial damage has occurred. So, it is necessary to elaborate on the etiology of thin endometrium in accordance with PRP therapy.