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Integrative Approach to Preparing Infertile Women with "Thin" Endometrium for Pregnancy

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Abstract: Infertility is a pressing issue that negatively impacts reproductive health and the overall quality of life of women. According to the World Health Organization (WHO), 15-20% of women of reproductive age face infertility issues.To identify the main causes of infertility in women with a "thin" endometrium through modern olved 80 women with primary and secondary infertility due to endometrial hypoplasia. All women were between 22 and 35 years old and were divided into two groups:Group I: 40 infertile women who received only antiplatelet therapy.Group II: 40 women who received a combination of PRP therapy and antiplatelet treatment.The study utilized general clinical, gynecological examination, ultrasound (USG) and Doppler imaging, hormonal, biochemical, morphological, and statistical methods.Results. In Group II, where PRP therapy was combined with antiplatelet agents, successful pregnancy outcomes were achieved in 33 out of 40 women (82.5%), while in Group I, the success rate was 20 out of 40 (50%).

Keywords: "thin" endometrium, infertility, miscarriage, PRP therapy, antiplatelet therapy.

I. Introduction

Early pregnancy loss and female infertility are not only gynecological concerns but also major medical and social issues. According to WHO data, the number of marriages affected by infertility has increased by 10-15% compared to previous records, with uterine-related problems accounting for 30% of cases [1].Currently, 45% of recorded pregnancies end in miscarriage during the early stages [2]. The leading cause of such cases is implantation failure associated with chronic endometritis and impaired endometrial receptivity [3]. Even in in vitro fertilization (IVF) programs, 70% of failures result from unsuccessful implantation of the transferred embryo [4]. A critical factor contributing to this issue is the presence of a "thin" endometrium.

Ultrasound assessment of implantation readiness during the periovulatory phase defines a "thin" endometrium as a thickness of less than 8 mm [5]. Although various treatments, including hormonal and antiplatelet therapies, have been studied, they have not consistently resulted in an optimal endometrial thickness.

PRP therapy (Platelet-Rich Plasma therapy) involves using the patient's own plasma enriched with platelets to stimulate tissue regeneration. In gynecology, this modern intrauterine therapy has been introduced as a promising approach to improve endometrial receptivity.

This study was conducted at the Women's Health Center of the Multidisciplinary Clinic of the Tashkent Medical Academy. The research involved 80 women with thin endometrium and primary or secondary infertility, all aged 22-35 years. Before and after treatment, the coagulation system, USG and Doppler imaging, and hormonal levels of progesterone and estrogen were assessed. The participants were divided into two groups: Group I (40 women) received only antiplatelet therapy, specifically 100 mg of aspirin daily for the first 15 days of the menstrual cycle for three months.

Group II (40 women) received a combination of PRP therapy and antiplatelet therapy. Alongside aspirin, PRP therapy was administered intrauterinely on days 11, 13, and 15 of the menstrual cycle.

Results. In Group I, ultrasound and Doppler assessments showed a gradual increase in endometrial thickness over the 3-month treatment period. In Group II, the endometrial thickness increased more significantly, with an average thickness of 9.0 mm on day 15 of the first treatment cycle (compared to 8.1 mm in Group I).

Table 1. Endometrial thickness (mm) after 1 month of treatment

Cycle Day	Group I, average, M-exo, mm	Group II, average, M-exo, mm
11	6 mm	6,2 mm
12	6,5 mm	6,9 mm
13	6,9 mm	7,4 mm
14	7,5 mm	8,5 mm
15	8,1 mm	9 mm

In the second month, the endometrial thickness increased further in both groups, but the results were superior in Group II.

Table 2. Endometrial thickness (mm) after 2 months of treatment

Cycle Day	Group I, average, M-exo, mm	Group II, average, M-exo, mm
11	6,4 mm	6,9 mm
12	6,8 mm	7,5 mm
13	7,3 mm	7,9 mm
14	7,9 mm	8,6 mm
15	8,4 mm	9,6 mm

By the third month, the endometrial thickness in Group II reached an average of 10.5 mm, while in Group I, it was 9.4 mm.

Table 3. Endometrial thickness (mm) after 3 months of treatment

Cycle Day	Group I, average, M-exo, mm	Group II, average, M-exo, mm
11	6,7 mm	7.0 mm
12	7,4 mm	7,5 mm
13	7,8 mm	8,4 mm
14	8,5 mm	9,2 mm
15	9,4 mm	10,5 mm

In both groups of women included in the scientific study, pregnancy was achieved even in the first month of treatment. This indicator was **4 (10%)** for the group that received only antithrombotic therapy, while for **Group II**, it was **7 (17.5%)**. By the final month of the study, the pregnancy rate reached **10 (50%)** in **Group I** and **17 (87.5%)** in **Group II** (Table 4).

Table 4. Pregnancy rates achieved during treatment duration.

Treatment Month	Group I (n=40), %	Group I (n=40), %
1	4 (10%)	7 (17,5%)
2	6 (15%)	11 (27,5%)
3	10 (25%)	17 (42,5%)
Total n, %	20 (50%)	35 (87,5%)

Discussion. The causes of thin endometrium in women with primary and secondary infertility can vary. However, similar treatment strategies are applied for both types of infertility. The use of antiplatelet agents and PRP therapy in infertile women with endometrial hypoplasia not only increases the chances of achieving a long-awaited pregnancy but also ensures a complication-free first trimester. Early pregnancy loss and failed pregnancies are often associated with endometrial dysfunction and implantation failure. These issues may arise due to inflammation, hormonal imbalances, biochemical deficiencies, and other factors. PRP therapy effectively addresses these underlying causes, enhancing endometrial receptivity and preventing early pregnancy loss.

Conclusion. In summary, combining PRP therapy with antiplatelet agents in women with thin endometrium significantly improves endometrial regeneration and receptivity, leading to higher pregnancy success rates. This integrative approach also helps in preventing recurrent pregnancy loss, making it a highly effective treatment strategy for infertile women.

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