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What is known already

Failure of frozen-thawed selective blastocyst transfer is often associated with the problems with endometrium. The key factor in determining the ART effectiveness during frozen-thawed selective blastocyst transfer is its adequate preparation. According to existing literature, a subsequent hysteroscopic control scraping of the uterine cavity and histological examination of these patients shows changes of endometrium in 91.4% of cases. Often the inability to overcome the so-called "thin endometrium" leads necessitates surrogate motherhood assistance.

2010 Nobel prize winner R. Edwards:
'Embryo's implantation is the last barrier of an ART' (2006)



Study question:

Our study aims at comparing the clinical usage effectiveness of oral 17 β -estradiol (Femoston® 2/10) 4 mg and estradiol valerate (Proginova®) 4 mg in the course of endometrium preparation for frozen-thawed selective blastocyst transfer.

Study design & Main results

Study design, size, duration:

The study draws its findings from 220 protocols of frozen-thawed embryo transfer cycles at reproductive age women, where the participating women were divided into two groups. All the patients underwent diagnostic hysteroscopy. Histologically, endometrial pathology was diagnosed in 89.6% of cases.

Participants/materials, setting, methods:

Group 1 comprised 110 women, who received HRT - estradiol valerate (Proginova®) 4 mg during the endometrium preparation starting from the 2nd day of menstrual cycle and were exposed to two or more frozen-thawed embryo transfer cycles, which ended in failure. Group 2 included the 110 women, which earlier were in Group 1. Group 2 received HRT – oral 17 β -estradiol (Femoston® 2/10) 4 mg in the course of the following frozen-thawed embryo transfer cycle starting from the 2nd day of menstrual cycle.

Limitations, reasons for caution:

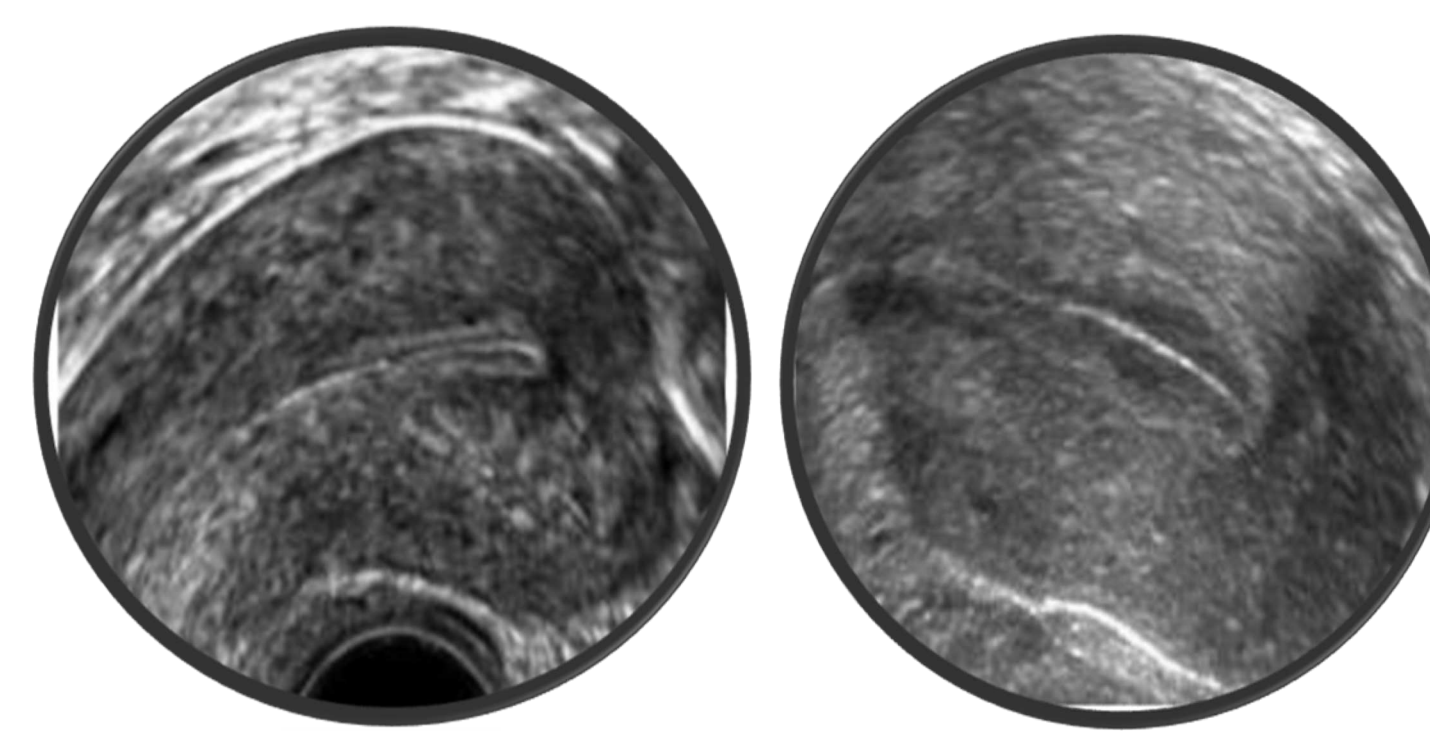
Group inclusion criteria: aged between 24 and 45 years; 5 or more years of infertility; clinical history (2 times or more) of ineffective frozen-thawed embryo transfer cycles on HRT - estradiol valerate (Proginova®); selective single blastocyst transfer.

Group exclusion criteria: contraindications for ART and estrogen prescription.

Main results and the role of chance:

First results coming from the groups under investigation and carried out with the help of transvaginal ultrasound on the 10th and 14th days showed a statistically significant difference in endometrium thickness among the women treated with oral 17 β -estradiol (Femoston® 2/10) ($p > 0,05$). Group 1 displayed the endometrial thickness of 6.8 ± 0.3 mm on 10th day, while in Group 2 it reached 8.2 ± 0.5 mm. On 14th day of the study endometrial thickness was equal to 7.3 ± 0.1 mm and 9.2 ± 0.2 mm respectively. Clinical pregnancy came about in 32.7% of cases (36 out of 110 patients became pregnant) when oral 17 β -estradiol (Femoston® 2/10) was used during the endometrial preparation for frozen-thawed embryo transfer cycles among women of the 2nd group.

Conclusion



estradiol valerate
(Proginova®)
Patient K.,
the third protocol
without result

17 β -estradiol
(Femoston® 2/10)
The same patient K.,
the first successful
protocol

Difference at the endometrial ultrasound structure when taking 17 β -estradiol (Femoston® 2/10) and estradiol valerate (Proginova®) on the 18th day of the menstrual cycle (embryotransfer day)

Wider implications of the findings:

Using of oral 17 β -estradiol (Femoston® 2/10) in the course of the endometrium preparation for frozen-thawed cycles at reproductive age women with repeated ART failure on HRT-estradiol valerate (Proginova®) enables to reach a clinical pregnancy in 32.7% of cases. The result may be associated with the increase in endometrium receptivity to the oral 17 β -estradiol molecule.

Trial registration number:

Case control study.

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