

THE EFFECT OF AGE ON A FAVORABLE ENDOMETRIUM FOR IMPLANTATION
BASED ON MID-LUTEAL PHASE ENDOMETRIAL ECHO PATTERNS IN
PROGESTERONE SUPPLEMENTED WOMEN HAVING FRESH EMBRYO
TRANSFERS (ET)

Brooke Neuman DO¹, Jerome H. Check MD PhD ^{2,3}, Kathleen O'Neil³, Carrie Wilson
MS³, Michael Sobel DO ^{2,3}

(1) Inspira Health Network Vineland, NJ

(2) Cooper Medical School of Rowan University Camden, NJ

(3) Cooper Institute for Reproductive and Hormone Disorders, Mt Laurel, NJ

Background: A reduction in oocyte quality is the most important factor in reducing fecundity in women of advanced reproductive age. There are very good live delivered pregnancy rates (LDPR) using fertilized donated oocytes transferred to the uterus of women of advanced reproductive age. This suggests that an aging endometrium is not a major factor in reduced fecundity. One noninvasive way of detecting a less than normal endometrium suited for implantation is the persistence of a triple-line (TL) pattern in the mid-luteal phase despite progesterone (P) supplementation (1).

Objective: To determine if women aged 40-44 have a greater tendency to have a TL pattern at mid-luteal phase vs. women age ≤ 39 .

Materials and Methods: Women undergoing in vitro fertilization-ET (IVF-ET) who were supplemented with vaginal P from the day after oocyte retrieval had a transvaginal ultrasound 3-4 days after the day 3 ET to evaluate their endometrial echo pattern. The results were compared in women ≤ 39 vs. 40-44 for the presence of a TL pattern.

Results: There were 3217 fresh ET cycles evaluated. The TL pattern was present in mid-luteal phase in 3.4% of the transfer cycles. There were 2074 ETs in women \leq age 39 and the TL pattern was found in 72 (3.5%). There were 1143 ETs in women aged

40-44 and the TL pattern was found in 39 women (3.4%) with no live deliveries. There were 141 live deliveries in women aged 40-44 in 1124 cycles where a non-triple line (TL) mid-luteal phase pattern was found (12.5%). For the younger group (≤ 39), there were 2002 transfers with a non-TL pattern and there were 744 live deliveries (37.2%). With the TL pattern, there were 72 ETs and 19 live deliveries (26.4%).

Conclusions: Though advancing reproductive age (40-44) does not increase the frequency of the presence of the TL mid-luteal phase endometrial echo pattern, the presence of a TL pattern in women of advanced reproductive age seems to have more of an adverse effect on a successful live delivery compared to women aged ≤ 39 . Since these echo patterns seem to persist in subsequent cycles, if another IVF-ET cycle is considered, one should consider adding intramuscular P plus vaginal in hopes of not having a TL pattern in mid-luteal phase in the next cycle. Though the absence of live deliveries in women 40-44 with a TL pattern may have been related to the paucity of cases, since this pattern will frequently repeat in subsequent cycles, this could influence the patient's decision whether to try again with their own eggs or consider using donor eggs. The group with the persistent TL pattern should consider doing a mock cycle to determine the right amount of P supplementation to correct a non-TL pattern before proceeding with an expensive donor egg program. Persistent failure to correct to a non-TL pattern could suggest the consideration of a gestational carrier.

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References:

1. Check JH, Dietterich C, Lurie D. Non-homogeneous hyperechogenic pattern 3 days after embryo transfer is associated with lower pregnancy rates. Hum Reprod. 2000; 15: 1069-1074.