

STUDY QUESTION

To determine if endometrial thickness on the day of ovulation induction has an impact on clinical outcomes in modified natural cycle IVF.

WHAT IS KNOWN ALREADY

Previous smaller studies provided contradictory findings regarding the impact of ultrasound assessment of the endometrium on the prediction of conception in natural cycle IVF. Several authors have reported on minimal endometrial thickness required in stimulated IVF cycles, varying between 5 and 8mm. A threshold endometrial thickness does not exist in the literature for natural cycle IVF.

STUDY DESIGN, SIZE AND DURATION

Single-centre retrospective study, 641 patients, July 2005-December 2011

PARTICIPANTS, MATERIALS, SETTING AND METHODS

All modified natural cycle IVF leading to successful oocyte retrieval performed in our institution during this time period were analyzed. Only first cycle attempts were included. In this protocol, patients are started on gonadotropin (Repronex 150 IU), antagonist (Orgalutran 0.25mg TID) and anti-inflammatory (Indocid) when the leading follicle size reaches 15mm until the day of ovulation induction when the leading follicle is at least 18mm. Results were stratified according to endometrial thickness on the day of ovulation induction. The main end-points were clinical pregnancy rates per cycle started and per embryo transfer.

MAIN RESULTS AND THE ROLE OF CHANCE

A total of 641 patients were included in our study. All endometrial linings were type I (triple line) on the day of ovulation induction. Results are presented by endometrial thickness on the day of ovulation induction, stratified into greater or equal to 8mm (75.9% of the patients studied) and less than 8mm (24.1% of patients). Clinical pregnancy rates per cycle started was significantly higher in the group of patients with an endometrial thickness ≥ 8 mm compared to < 8 mm, 19.5% vs. 12.8%, respectively ($p = 0.03$). Clinical pregnancy rates per embryo transfer were also superior in the group with an endometrial thickness ≥ 8 mm, 37.5% vs. 22.9%, respectively, and this also reached statistical significance ($p = 0.02$).

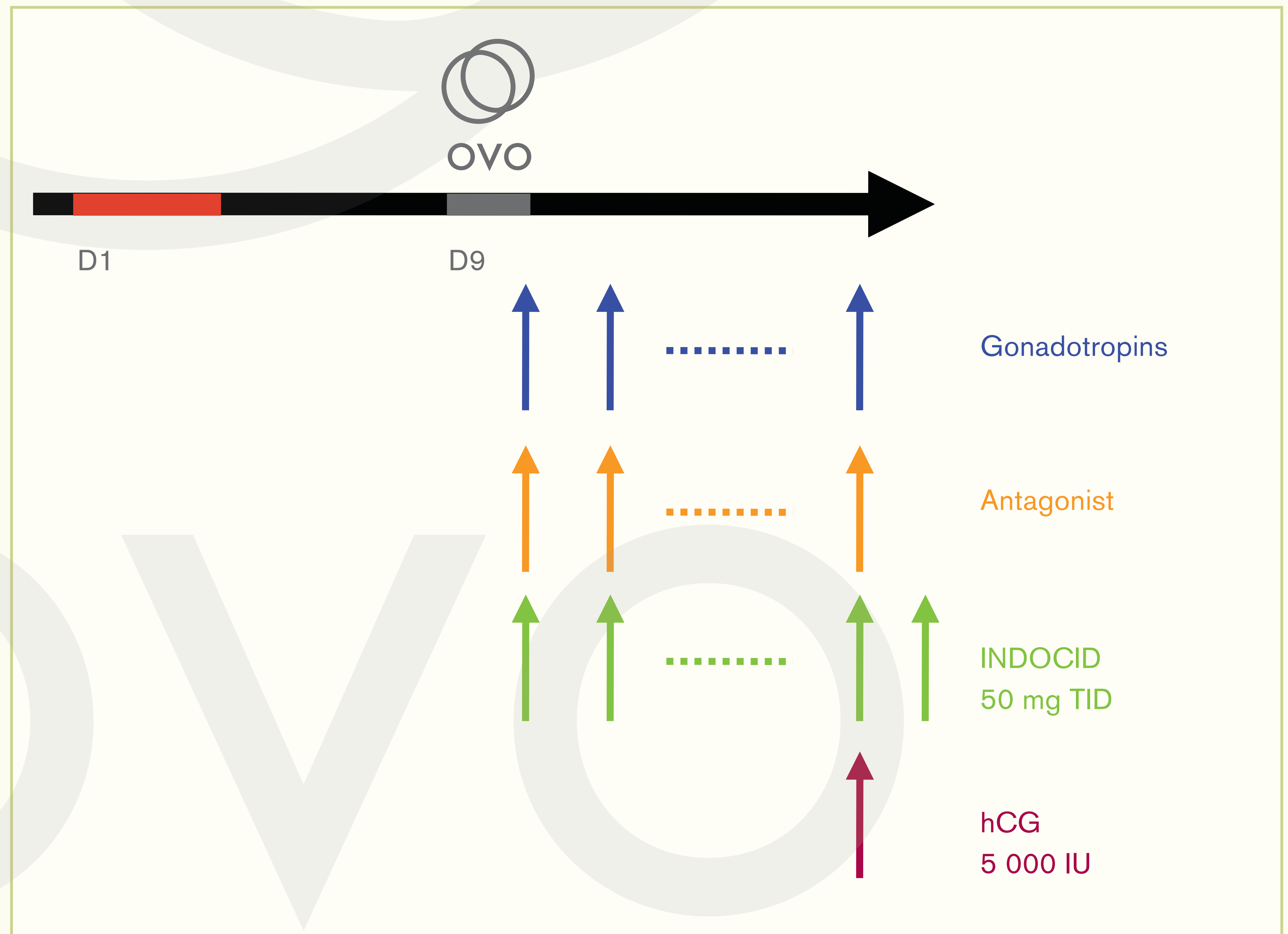
LIMITATIONS, REASONS FOR CAUTION

Endometrial thickness is one of several predictors of success in natural cycle IVF. Another important predictor of success is leading follicle size on day of ovulation induction. In this study only patients with a leading follicular size of 18mm or more on the day of hCG were analyzed, regardless of level of estradiol, in order to stratify for endometrial thickness.

WIDER IMPLICATIONS OF THE FINDINGS

Modified natural cycle IVF has become an increasingly desired protocol that it is low-risk and patient friendly. Endometrial thickness at the time of ovulation induction clearly has an impact on clinical outcomes. One should aim for an endometrial thickness of at least 8mm to significantly predict successful outcome in modified natural cycle IVF.

Modified natural cycle IVF protocol



ENDOMETRIAL THICKNESS

Parameters	<8	≥ 8	p value
Number of cycles with this each endometrial thickness	148 (24.1)	466 (75.9)	
Successful OR, n (%)	135 (91.2)	421 (90.3)	0.75
Number of cycles with fertilization (2PN)	96 (71.1)	280 (66.5)	0.32
Embryo transfers, n (%)	80 (54.1)	242 (51.9)	0.65
Biochemical pregnancy per cycle, (%)	14.9	21.7	0.04
Biochemical pregnancy per ET, (%)	26.5	41.4	0.02
Clinical pregnancies per cycle, (%)	12.8	19.5	0.03
Clinical pregnancies per ET, (%)	22.9	37.5	0.02

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