

EP13.20 Association of uterine contractility characteristics at embryo transfer (ET) and ongoing pregnancy in IVF/ICSI patients with dysmenorrhoea – the WAVES method in a Chinese population

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OBJECTIVES

To investigate whether specific **uterine contractility characteristics** assessed at embryo transfer (ET) are associated with ongoing pregnancy (OP) in IVF/ICSI patients with dysmenorrhoea.

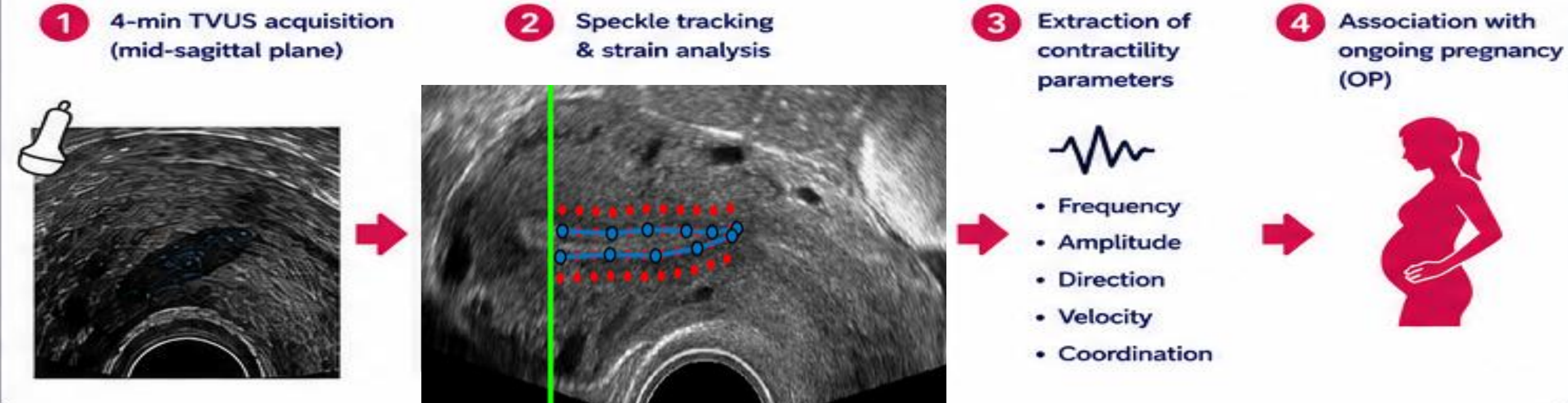
We hypothesised that uterine contraction coordination, measured using the **WAVES method**, may reflect underlying uterine dysfunction and provide prognostic value for reproductive outcomes.

METHODS

- Prospective observational cohort study at the Women's Hospital, Zhejiang University School of Medicine, Hangzhou, China (from 2024 onwards).
- 68 IVF/ICSI patients undergoing fresh or frozen ET included: 29 (43%) reported dysmenorrhoea.
- No restrictions on IVF/ICSI indication, stimulation protocol or embryo quality.
- Immediately prior to ET, all patients underwent a 4-minute transvaginal ultrasound (TVUS) examination in the mid-sagittal uterine plane.
- Recordings analysed offline using the WAVES method (speckle tracking & strain analysis) to quantify uterine contractility.
- Parameters extracted: frequency, amplitude, direction, velocity, coordination.
- Clinical and contractility characteristics compared between OP and non-OP groups using χ^2 tests, independent t-tests and Mann-Whitney U tests.

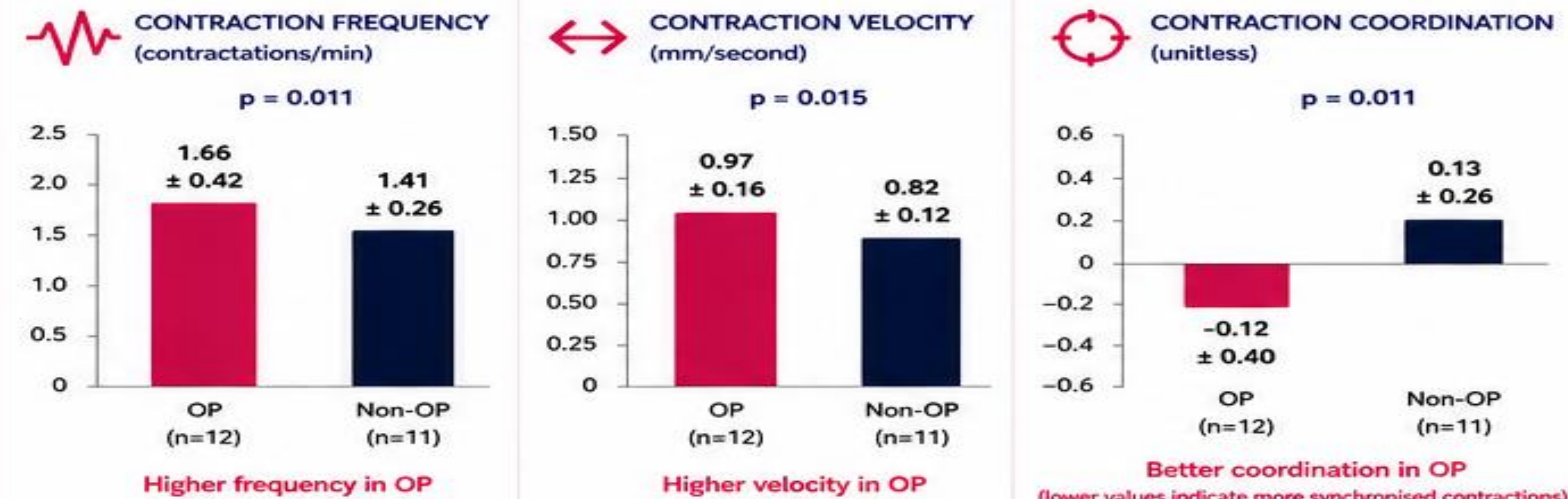
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WAVES METHOD: QUANTIFYING UTERINE CONTRACTILITY



RESULTS – DYSMENORRHOEIC SUBGROUP*

Among patients included in the OP comparison: 12 achieved OP and 11 did not.



 Better uterine contractility at ET – higher frequency and velocity, and better coordination – was significantly associated with ongoing pregnancy in IVF/ICSI patients with dysmenorrhoea.

*Among dysmenorrhoeic patients. OP: ongoing pregnancy.

BASELINE CHARACTERISTICS (dysmenorrhoeic subgroup)

Characteristic	OP (n=12)	Non-OP (n=11)	p-value
Age (years)	31.3 ± 3.7	32.6 ± 4.1	0.38
BMI (kg/m ²)	22.1 ± 2.5	22.6 ± 2.7	0.62
Infertility duration (years)	3.6 ± 2.1	3.9 ± 2.0	0.71
Endometrial thickness (mm)	9.6 ± 1.6	9.2 ± 1.7	0.52
Serum progesterone at ET (ng/mL)	1.15 ± 0.38	1.08 ± 0.32	0.63
Fertilization method, n (%)			
IVF	5 (41.7)	6 (54.5)	0.47
ICSI	7 (58.3)	5 (45.5)	
Embryo quality (good), n (%)	10 (83.3)	8 (72.7)	0.66
Stage of ET, n (%)			
Day 3	3 (25.0)	4 (36.4)	0.65
Day 5	9 (75.0)	7 (63.6)	
Single embryo transfer, n (%)	9 (75.0)	7 (63.6)	0.49

Values are mean ± SD or n (%). No statistically significant differences were found between groups (all p>0.05).

CONCLUSIONS

- Uterine contractility characteristics measured at ET are associated with subsequent ongoing pregnancy in IVF/ICSI patients with dysmenorrhoea.
- In particular, contraction coordination may represent a functional marker of underlying uterine dysfunction and reproductive potential.
- These preliminary findings support further investigation of uterine contractility assessment as a potential biomarker for patient stratification and individualized reproductive care in symptomatic IVF/ICSI populations.

ACKNOWLEDGEMENT

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