

EP04.27 Artificial Intelligence (AI) in follicular monitoring using 3D ultrasound: a new algorithm based on clinical outcomes

Angela Palumbo, Adela Rodríguez-Fuentes, Jean Paul Rouleau, Rossella Papa, Manuela Costa, Jairo Hernández
CAR HUMANA DE CANARIAS, La Laguna, Spain.



Objectives

To analyze data of follicular monitoring using SonoAVC 2.0 with AI to determine the optimal trigger day to achieve the maximum number of mature oocytes.

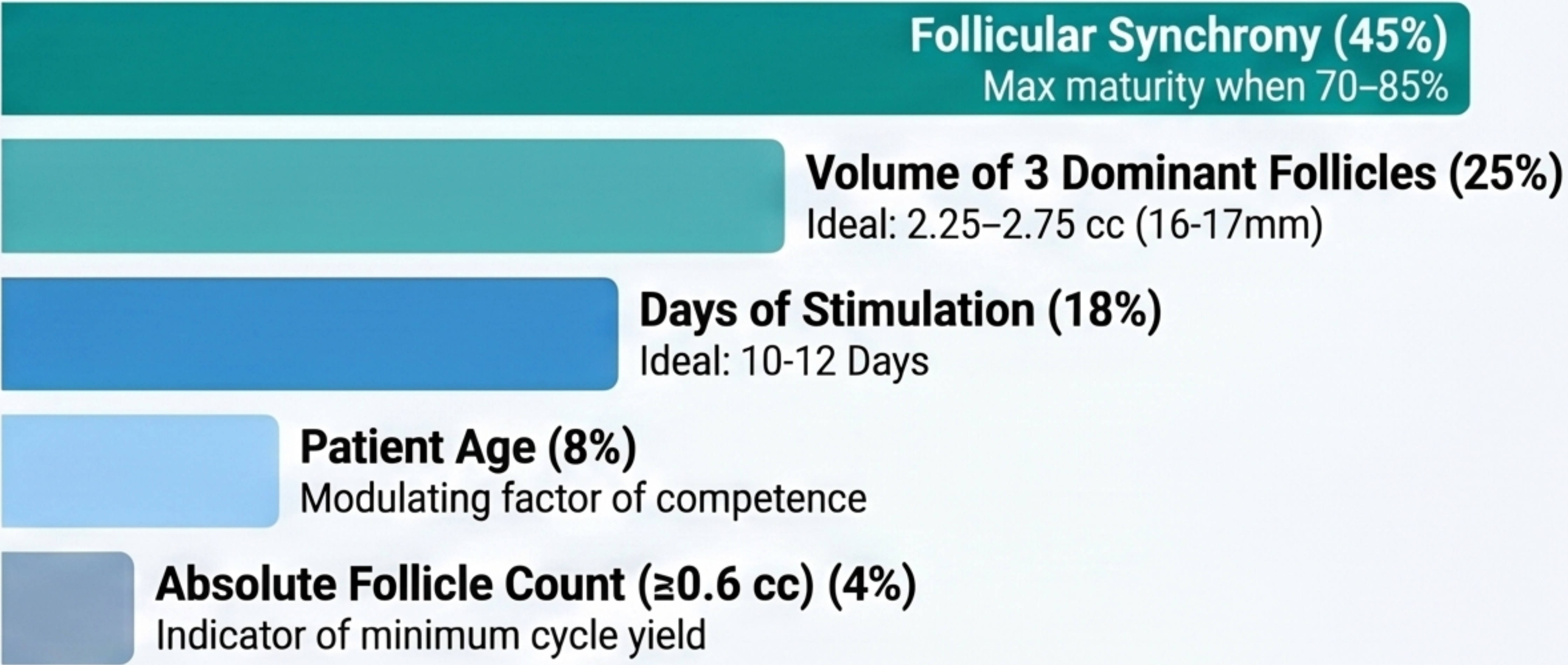
Methods

Retrospective analysis of **246 IVF cycles** using the Voluson E22 system with SonoAVC™ 2.0 software with AI in a private fertility center.

Follicular volume on the day of trigger was tracked and the proportion of follicles ≥ 0.6 cc among those ≥ 0.3 cc was calculated to identify correlations with other cycle variables (oocyte maturation rate, fertilization rate, total number of follicles ≥ 0.6 cc, volume of the 3 dominant follicles, stimulation days, patient age). Relationships between variables were assessed using correlation coefficients and a p value < 0.05 was considered statistically significant.

Results

The Trigger Score Model



Relative Impact of Variables on Oocyte Competence

The Trigger Score Formula

Trigger Score = 0.45(Synchrony) + 0.25(Dominant) + 0.18(Days) + 0.08(Age) + 0.04(Count)

Conclusion

Follicular synchrony is the dominant determinant of oocyte competence, accounting for approximately 45% of the predictive weight in the model. The remaining variables act mainly as modulating factors of the optimal trigger timing.

AI-assisted 3D monitoring allows for a more precise, data-driven approach to timing the trigger than traditional 2D measurements.