



Impact of procedural timings on clinical outcomes

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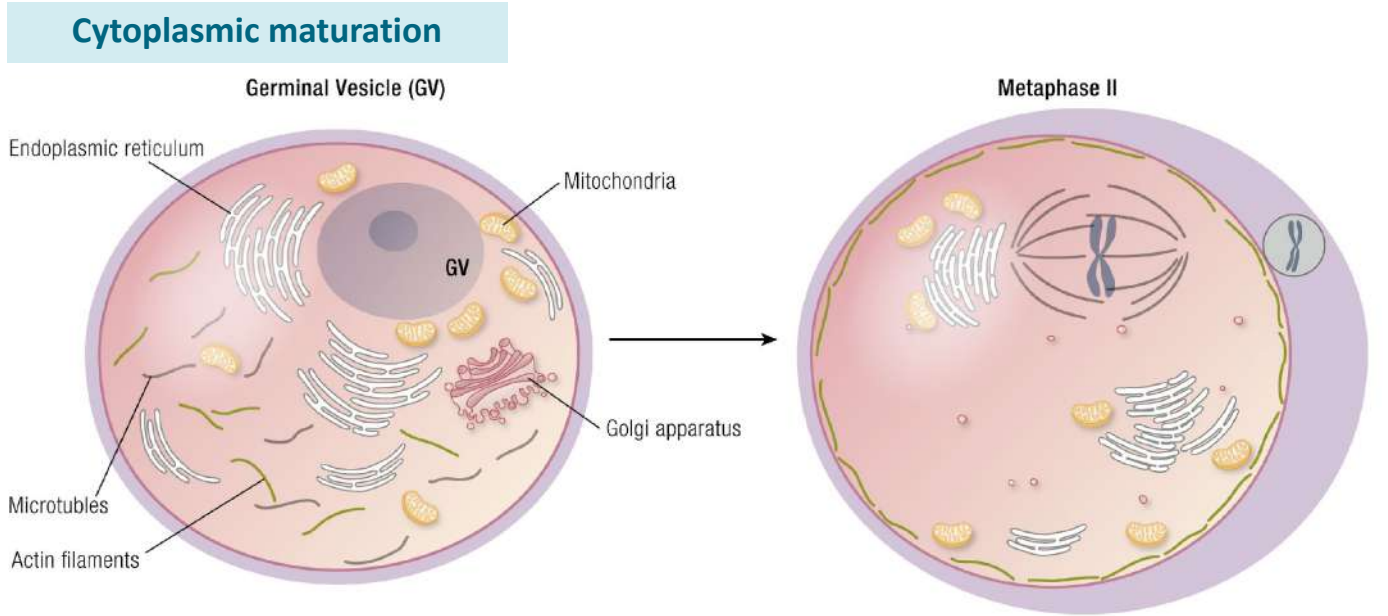
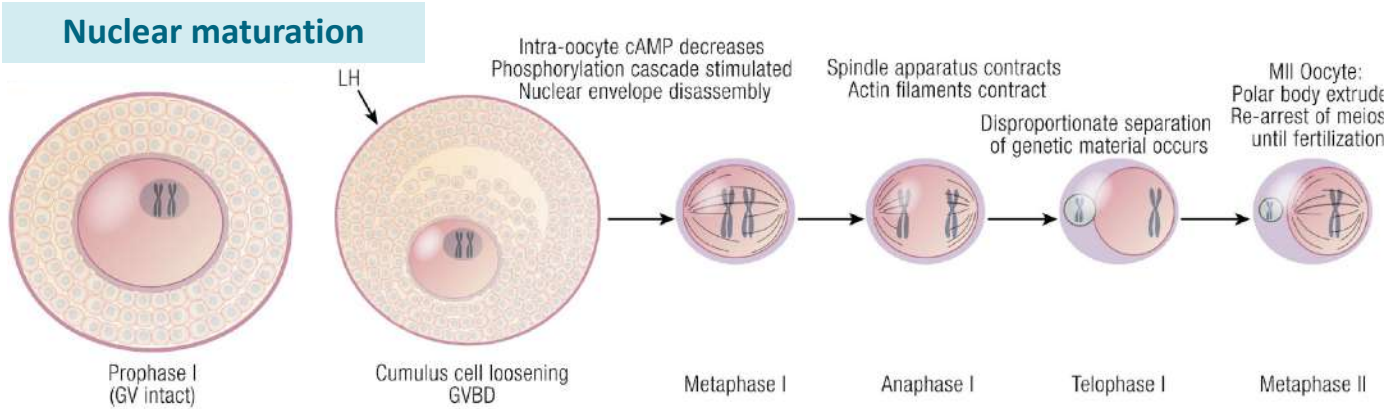
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Conflict of Interests

Lecture fees by Merck and Organon

Oocyte Competence





The Quest to Enhance Oocyte Competence

Trigger timing

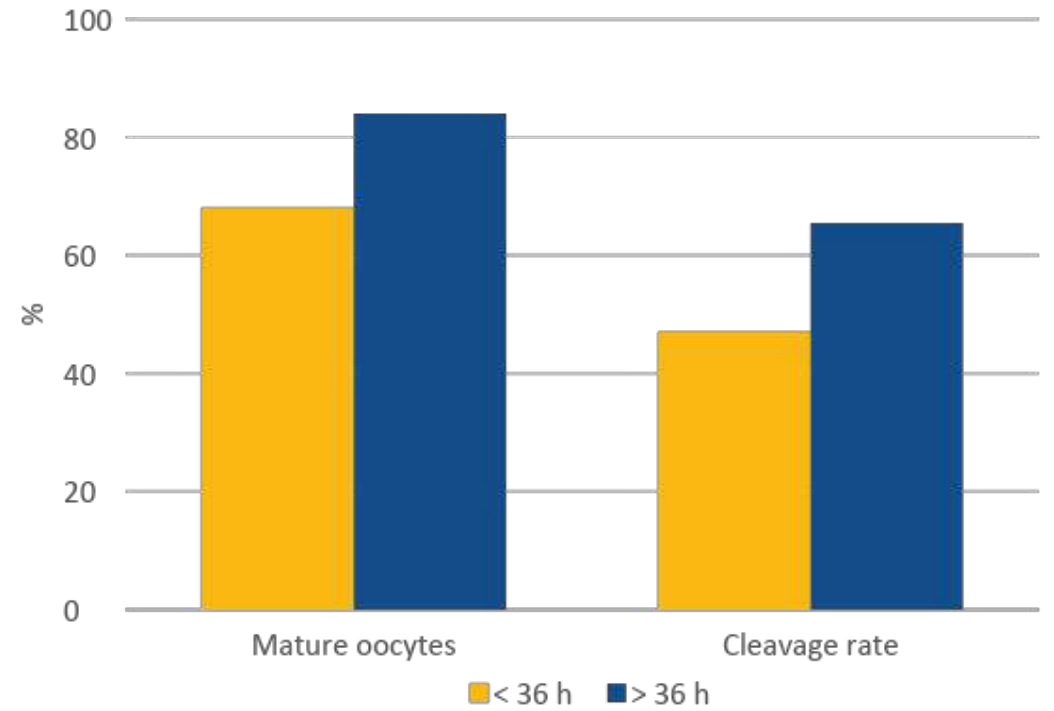
Double trigger

Denudation and ICSI timing

Fertilisation assessment timing

The Quest to Enhance Oocyte Competence

Trigger timing



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Trigger timing

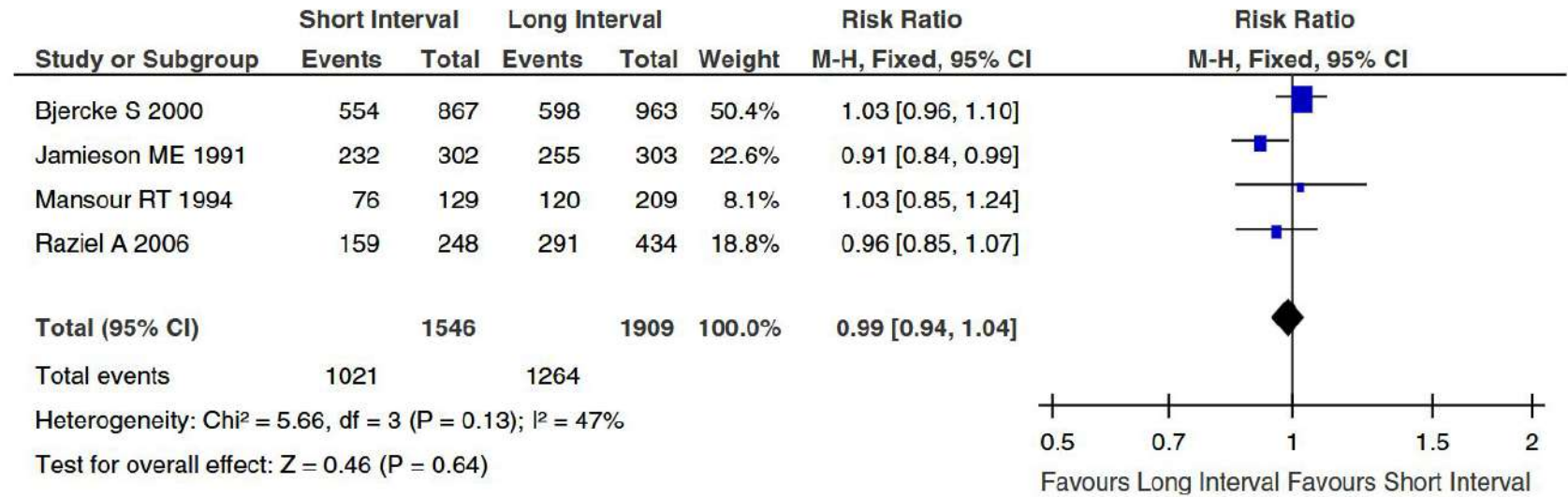
- Oocyte maturation



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Trigger timing

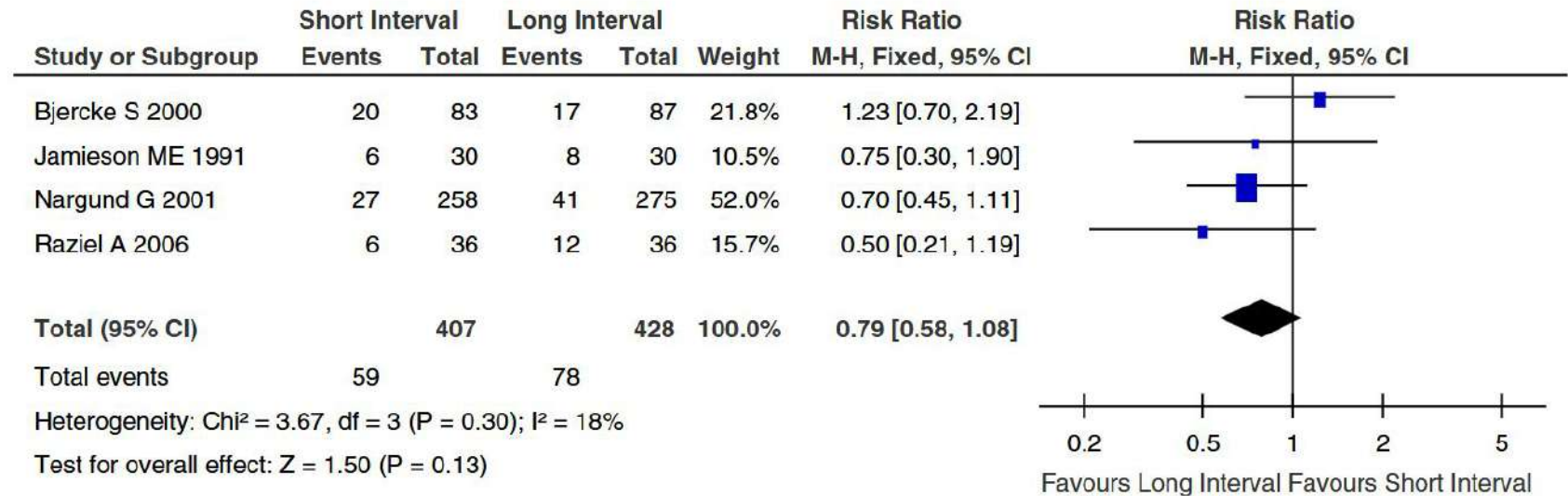
- Fertilisation rate



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Trigger timing

- Clinical pregnancy rate



- Agonists cycles only
 - Most recent study included – 2006

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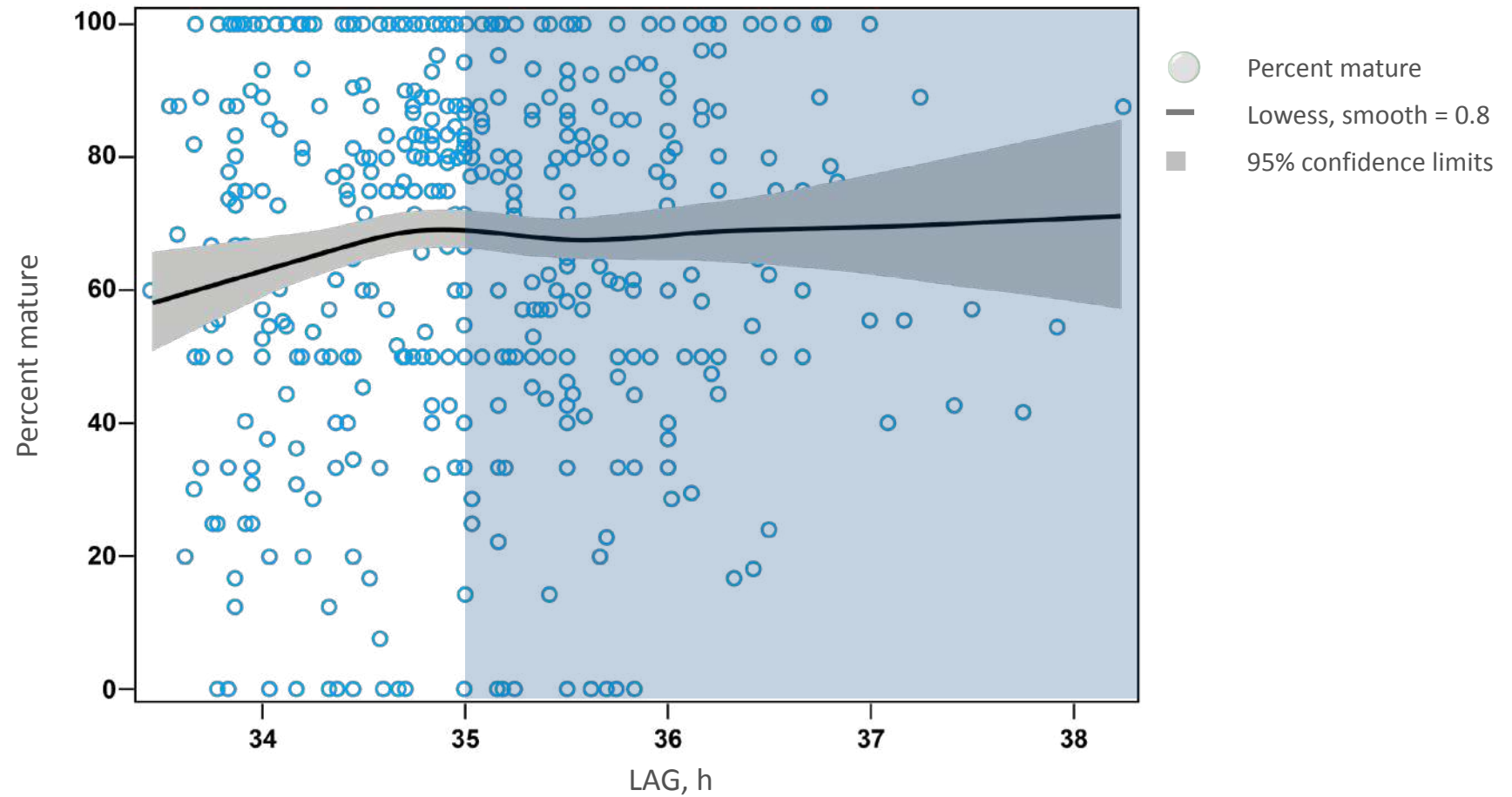
Trigger timing

- RCT with antagonist cycles
Primary outcome: oocyte retrieval rate

	36 hours (n=78)	38 hours (n=78)
Female age	37.0 (35.0-38.2)	37.0 (35.0-38.0)
Follicles >11 mm	9.5 (8.0-11.0)	9.0 (8.0-10.2)
Oocytes retrieved (median, IQR)	5.5 (5.0-7.0)	6.0 (5.0-6.2)
Maturation rate (%)	87.5 (80.0-100.0)	80.0 (75.0-87.5)
Patients with no oocytes collected	2/78	4/78
Pregnancy rate	16/78	13/78

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Trigger timing



- Retrospective study | n=511 cycles
- n=36 cycles 36h45-38h25



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Trigger timing

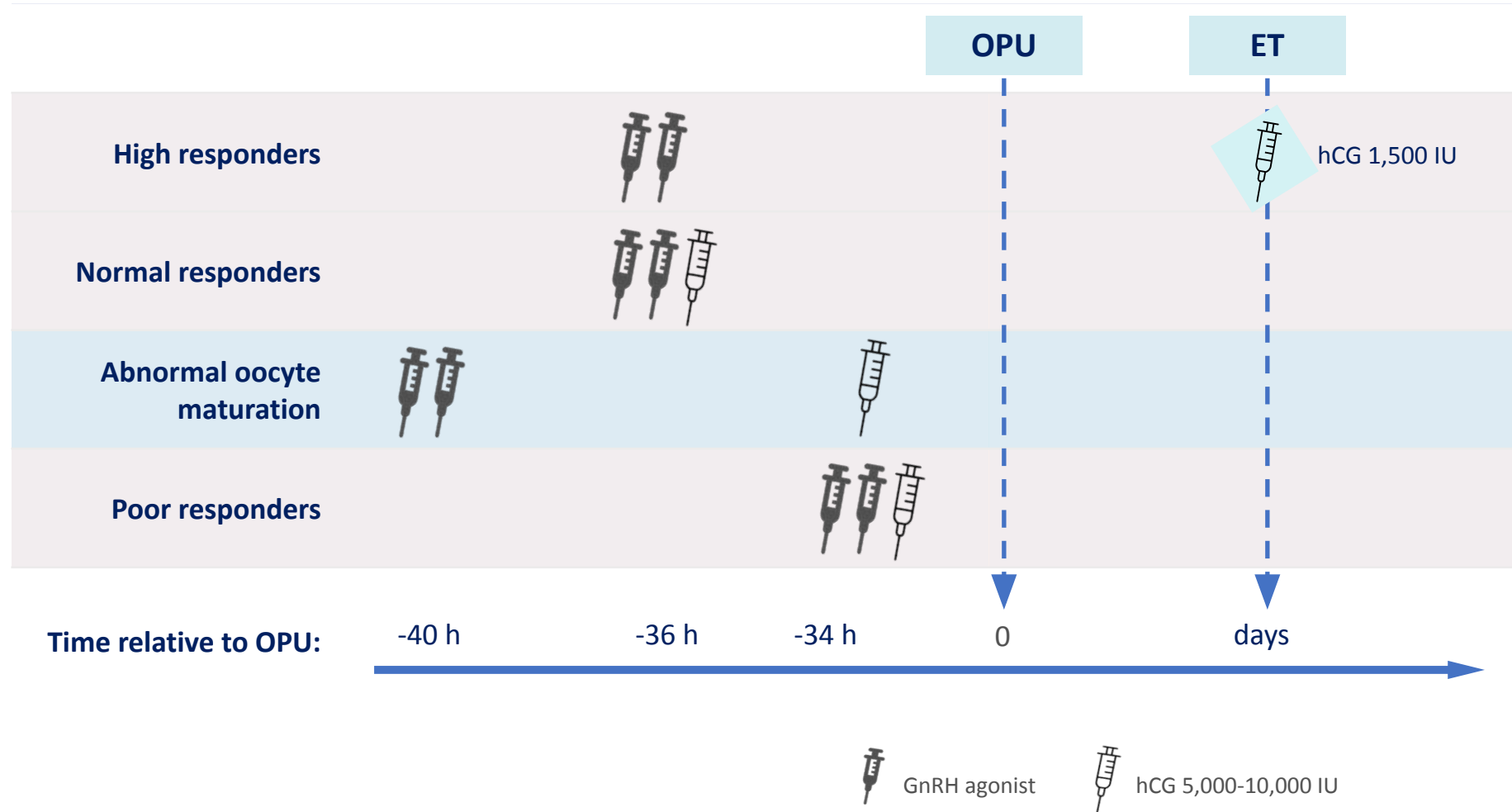
Double trigger

Denudation and ICSI timing

Fertilisation assessment timing

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Double Trigger



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Double Trigger

	hCG only	Double trigger	P-value
Below 66% mature oocytes in previous cycle			
Number of oocytes retrieved	8.0 ± 4.7	10.4 ± 5.3	0.03
Metaphase II oocytes	3.7 ± 2.4	6.5 ± 3.0	<0.008
Number of 2PN embryos	2.8 ± 2.17	6.6 ± 2.8	<0.001
Number of top-quality embryos	1 ± 1.7	3.16 ± 1.9	<0.02
Ongoing clinical pregnancy rate	0/12	6/12	<0.001
Below 50% oocytes from follicles >14 mm in previous cycle			
Number of oocytes retrieved	2.3 ± 2.5	7.0 ± 4.6	<0.02
Number of 2PN embryos	1.7 ± 1.2	6.0 ± 4.6	<0.002
Number of top-quality embryos	0.4 ± 0.5	3.7 ± 0.8	0.06
Ongoing clinical pregnancy rate	0/8	3/8	<0.03

Only preliminary results!



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Trigger timing

Double trigger

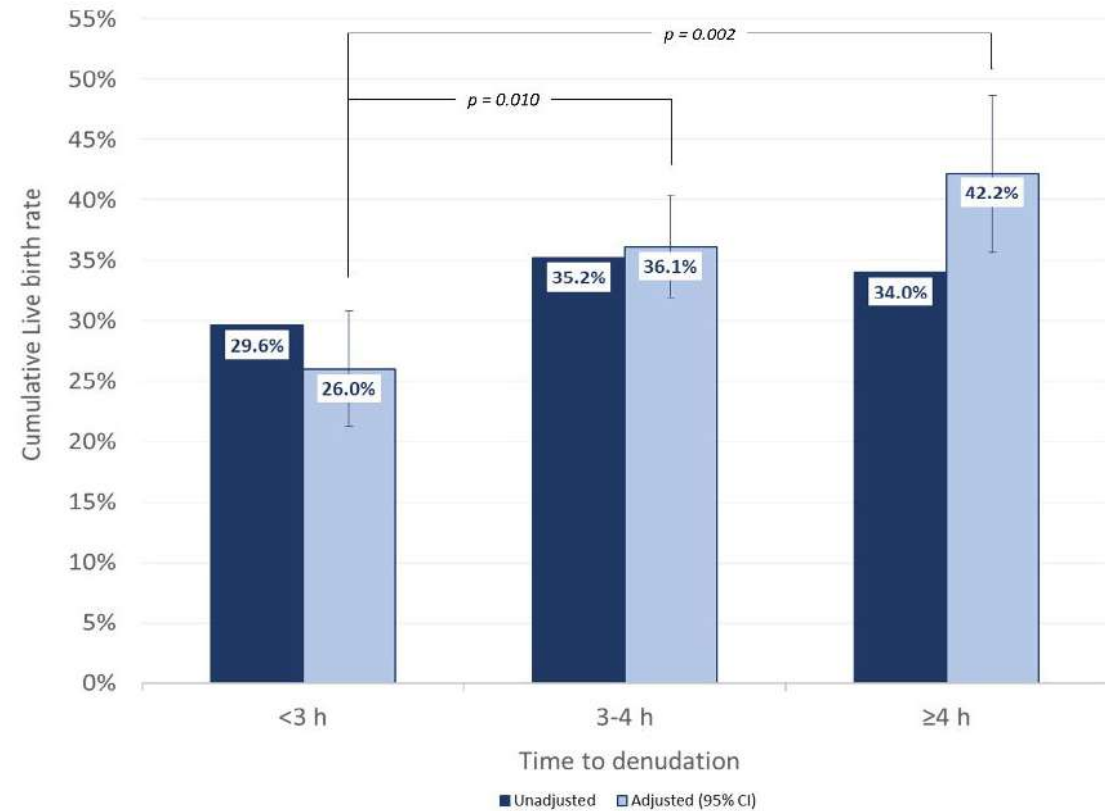
Denudation and ICSI timing

Fertilisation assessment timing

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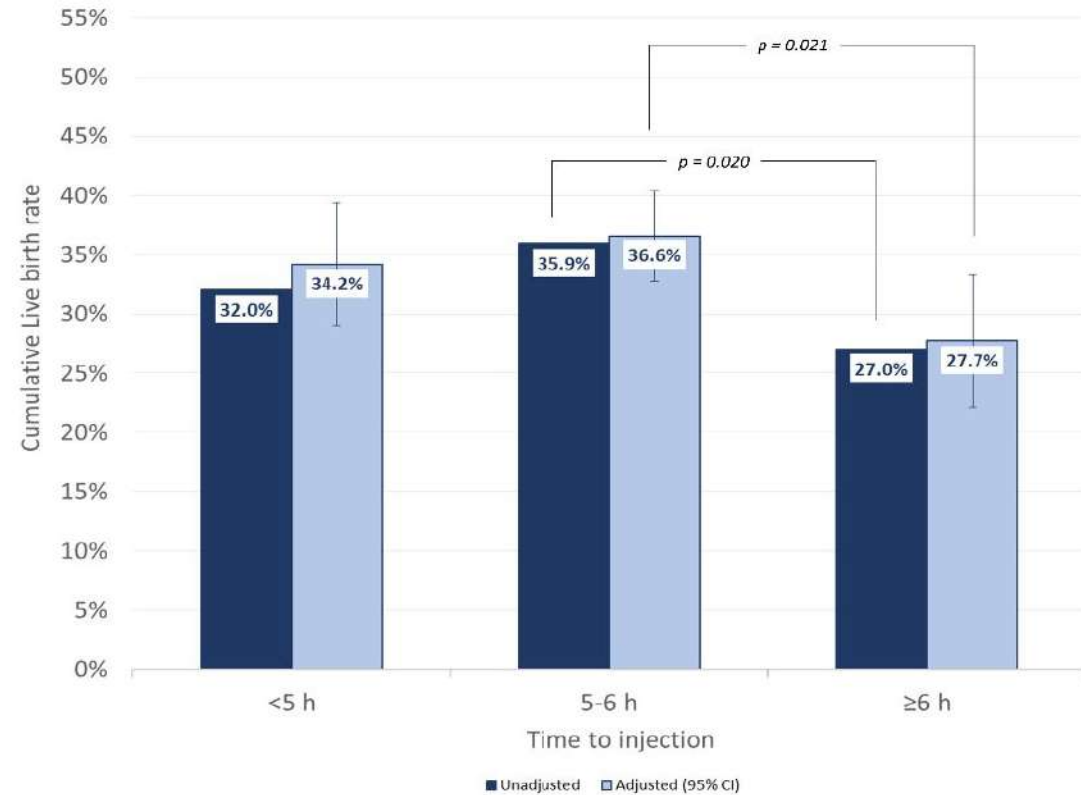
Denudation timing

- 1378 ICSI cycles
- single centre retrospective design



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Injection timing



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Challenges Ahead

The impact of dual trigger and time to denudation

Multicentric RCT currently in regulatory submission phase:

- hCG vs dual-trigger
- long vs short culture interval between oocyte retrieval and denudation

Primary objective: CLBR 24 months after randomization in the four study arms.



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Trigger timing

Double trigger

Denudation and ICSI timing

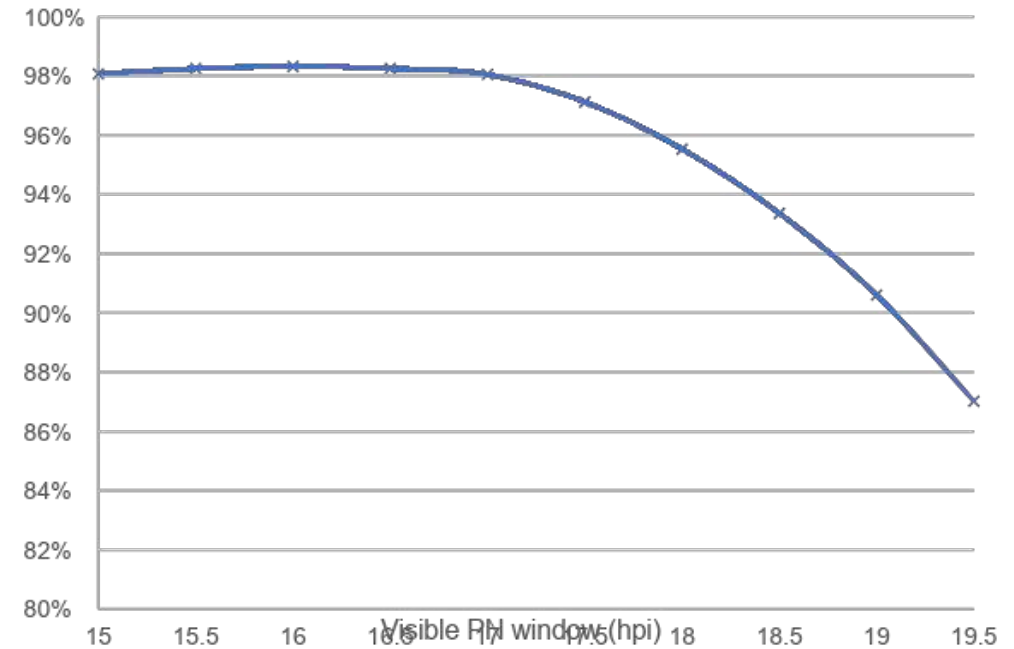
Fertilisation assessment timing

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Fertilisation assessment timing

- 27021 ICSI derived embryos
- Multicentre retrospective study

Percentage of human zygotes exhibiting visible PN in each 30-min window post-insemination



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Take Home Messages

1. **Trigger Timing – Let's start from the beginning**
 - ensuring nuclear and cytoplasmic maturity
 - optimising fertilisation, embryo development and pregnancy outcomes
 - > 35h
2. **Emerging Strategies – Interesting Optimization Approaches**
 - Double Trigger
 - Delaying denudation timing
3. **Refinement of fertilisation check timing – Time Lapse Imaging Insights**
 - Static observations – assessment should be performed at 16-17 hpi

Time will Tell...

**Connecting innovation,
improving life.**



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Thank you!

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