

IVF vs ICSI In Non-Male Factor Infertility

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Introduction & Overview

- ICSI was developed to treat **severe male-factor** infertility
- **Opportunity of paternity** to men with severely impaired sperm characteristics
- Over the last decades the use of ICSI has **dramatically increased**
 - 71.3% ICSI cycles in 2014 (Data from European registries, ESHRE)
 - Almost 80% ICSI cycles were performed USA (Boulet et al., JAMA, 2015)
 - Use of ICSI is 60x higher compared to IVF (Middle East, ICMART, 2016)
- Largest increase was detected among cycles with **non-male factor** infertility
- ICSI considered **standard choice** of insemination method
 - Advanced maternal age
 - Low ovarian response
 - Unexplained infertility
 - **No indication...**

ICSI does not offer any benefit over conventional IVF across different ovarian response categories: a European multicenter analysis

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ICSI does not offer any benefit over conventional IVF across different ovarian

Study Description (Study 1)

Should ovarian response affect the decision of the insemination method in COS?

- Retrospective multicentre analysis 2009 – 2014 (15 centres)
- Study population included 4 891 patients
- Primary outcome
 - **Cumulative LBR** in relation to insemination method, in different ovarian response categories
 - Classified into groups based on **number of oocytes** retrieved: 1-3 (poor responders), 4-9 (suboptimal responders), 10-15 (normal responders), > 15 oocytes (high responders)
- Included exclusively patients with **non-male factor** infertility (WHO, 2010)

Discussion (Study 1)

- **Baseline characteristics** of the four groups
 - Age, BMI no significant difference
 - Cause of infertility was significantly different between IVF and ICSI
- **Fertilization rates** were similar between IVF and ICSI in the four ovarian response categories (range from 53.3 to 66.6%)
- **Embryo utilization rates** comparable between IVF and ICSI
- **Cumulative LBR** were similar between IVF and ICSI in poor responders (20.0 vs. 12.8%) and suboptimal responders (28.4 vs. 35.1%)
 - Trend towards **higher cumulative LBR** in poor responders
- **Cumulative LBR** comparable between IVF and ICSI in normal responders (44.4 vs. 48.9%) and high responders (59.8 vs. 61.3%)
- Multivariate regression analysis - **insemination method** not significantly associated with cumulative LBR

IVF vs ICSI in non-male infertility: time to change course?

Lattes K; Cairo O; Serra S; Gari M; Molins C; Bello J; Pujol A; Castro M; García D; Vassena R; Mataró D.

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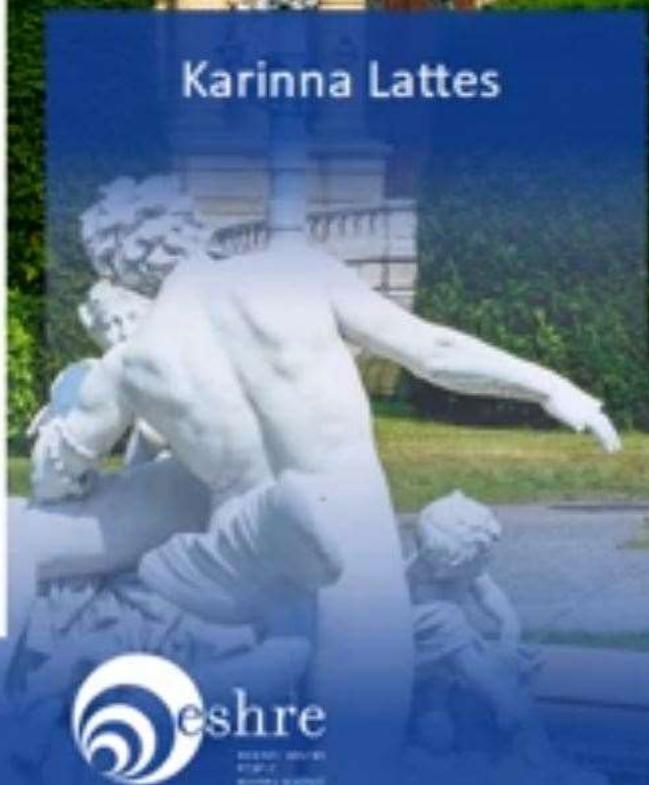
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Karina Lattes



35th Annual Meeting
Vienna, Austria, 23-26 June 2019

IVF vs ICSI in non-male factor infertility: time to change course?

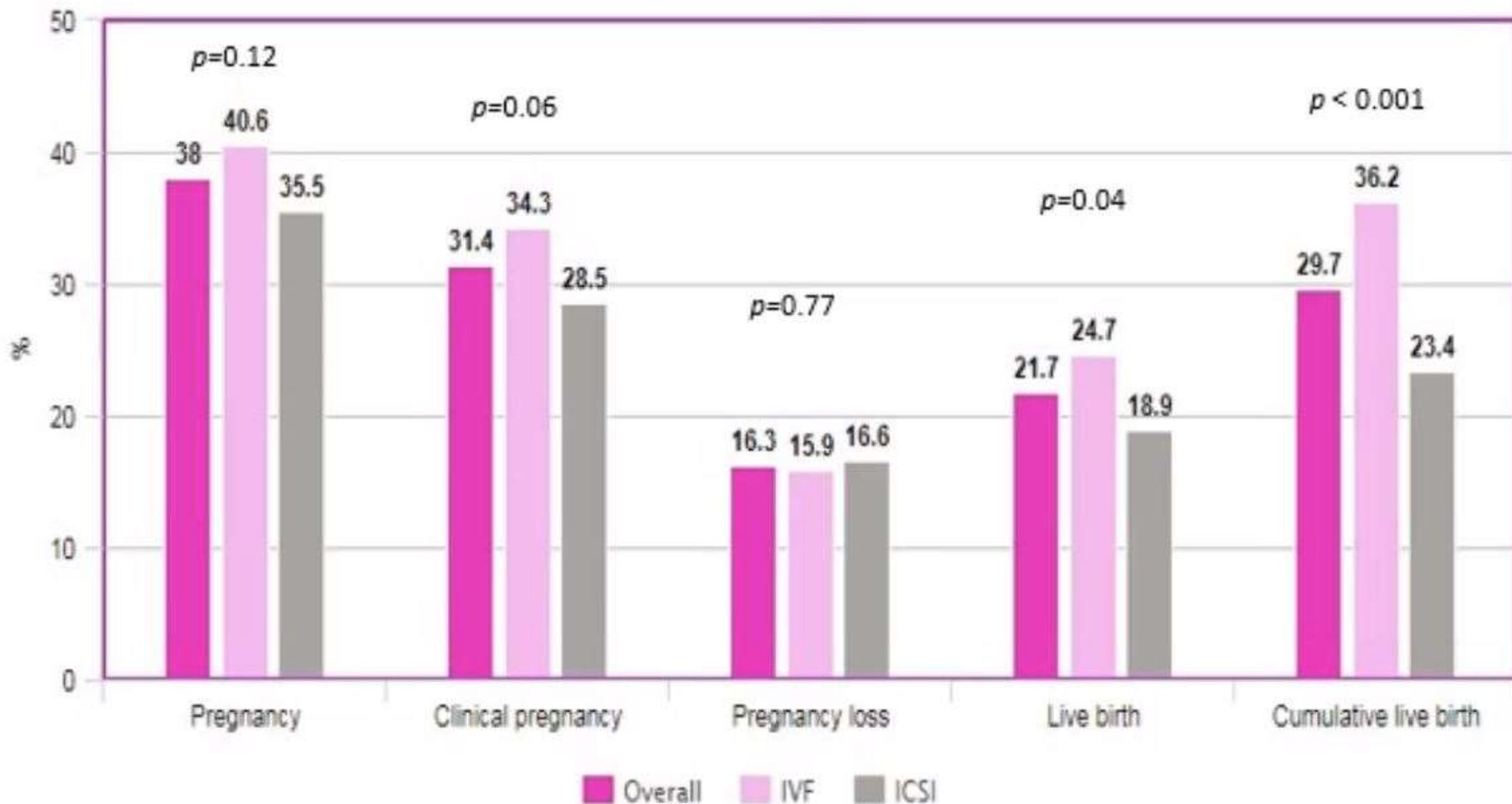
Study Description (Study 2)

- Retrospective study 2008 – 2016
 - Study population included 956 patients (479 IVF and 477 ICSI cycles)
 - **Primary outcome**
 - Cumulative LBR
 - **Secondary outcomes**
 - Fertilization rate & fertilization failure rate
 - Biochemical pregnancy rate
 - Clinical pregnancy rate
 - Live birth rate
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Discussion (Study 2)

- **Fertilization rates** were similar between IVF and ICSI (67.04 vs. 66.9%)
 - **Fertilization failure** was higher in the IVF group (7.1 vs. 4.2%, $p=0.06$)
 - **Biochemical and clinical pregnancy rates** not statistically significant
 - **Live birth rate** was significantly higher in the IVF group (24.7 vs. 18.9%)
 - **Cumulative LBR** was significantly higher in the IVF group (36.2 vs. 23.4%)
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Overall population



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Conclusion & Practice Recommendation

- In the absence of male factor infertility, the use of ICSI was associated with **lower cumulative LBR**
- No advantage of ICSI over IVF in cases of **non-male factor** infertility
 - Little evidence demonstrating effectiveness in this population
- Number of oocytes retrieved has no value for the selection of **insemination method**
 - ICSI unnecessary for poor responders in the absence of male factor infertility
- Added **cost** of ICSI should be taken into account when counselling patients
- ICSI **has been advocated** to increase fertilization rates, prevent fertilization failure and provide more embryos to choose from
- Systematical ICSI policy calls for a **critical review** of current practices

Thank You!