

**P-031 The effect of ejaculatory abstinence period on embryological and clinical outcomes in ICSI cycles: A retrospective analysis of 3,353 cycles**

**G.C. Cermisoni<sup>1</sup>, L. Pagliardini<sup>1</sup>, A. Alteri<sup>2</sup>, L. D. Santis<sup>2</sup>, S. Esposito<sup>2</sup>, S. Minetto<sup>2</sup>, E. Papaleo<sup>2</sup>, P. Vigano<sup>1</sup>, M. Candiani<sup>2</sup>**

<sup>1</sup>I.R.C.C.S. San Raffaele Scientific Institute - Milan- Italy, Reproductive Sciences Laboratory- Obstetrics and Gynaecology Unit, Milan, Italy ;

<sup>2</sup>I.R.C.C.S. San Raffaele Scientific Institute - Milan- Italy, Obstetrics and Gynaecology Unit, Milan, Italy

**Study question:** Does ejaculatory abstinence period in male affect embryological and pregnancy outcomes following fresh embryo transfers in ICSI cycles?  
**Summary answer:** Shorter ejaculatory abstinence period is associated with lower triploid zygotes rate per ICSI cycle but it does not affect clinical outcomes after fresh embryo transfers.

**What is known already:** Lower sperm quality may negatively impact on fertilisation rate and embryo morphokinetic parameters after ICSI and the effect of the ejaculatory abstinence period before semen collection on seminal parameters and sperm quality has been widely reported. However, the impact of ejaculatory abstinence on clinical outcomes is still controversial. WHO (World Health Organization) guideline recommended that abstinence period should be 2-7 days. Even so, there are no larger prospective trials determining the optimal timing for ejaculatory abstinence period for infertile couples.

**Study design, size, duration:** This is a single center retrospective observational study of 3,353 fresh cycles from January 2017 to December 2020. Semen analysis was done according to the WHO criteria. Exclusion criteria for this study were frozen gametes and cycles with no retrieved oocytes. Primary outcomes were fertilization rate and triploid zygotes rate. Secondary outcomes were blastulation rate, ongoing pregnancy rate and live birth rate per fresh embryo transfer.

**Participants/materials, setting, methods:** The correlation between ejaculatory abstinence and continuous outcomes was evaluated by Spearman's correlation analysis in order to detect potential non-linear associations. Generalized linear model and logistic regression were used, respectively for continuous and binary outcomes, in order to adjust for confounders such as female age, male age, number of retrieved oocytes, percentage of mature oocytes, infertility causes, seminal volume, sperm concentration and total progressive sperm motility. A p value <0.05 was considered significant.

**Main results and the role of chance:** The male mean age was  $40.3 \pm 5.5$  and mean duration of abstinence was  $2.9 \pm 1.7$  days. The mean age of female patients was  $38.2 \pm 4.0$ . Higher ejaculatory abstinence period was associated with a higher sperm concentration (Spearman  $p=3.1 \times 10^{-6}$ ) but not with a higher total sperm progressive motility. Even so, no significant correlation with EA were observed when considering fertilization rate, blastulation rate, ongoing pregnancy and live birth rate per transfer in analyzed cycles. Triploid zygote rate was positively associated with a higher ejaculatory abstinence period. For the ejaculatory abstinence period of 1 day ( $n=64$ ), 2 days ( $n=1523$ ), 3 days ( $n=1032$ ), 4 days ( $n=408$ ), 5 days ( $n=174$ ), 6 days ( $n=47$ ) and  $\geq 7$  days ( $n=105$ ) the mean triploid rate was 2.4%, 2.4%, 2.5%, 4.1%, 3.6%, 5.4% and 4.3%, respectively (Spearman  $p=9 \times 10^{-3}$ ). Triploid zygote rate was independent of semen volume, concentration and total progressive motility.

**Limitations, reasons for caution:** This is a large observational study with a retrospective data collection. Despite our methodological approach, the presence of biases related to retrospective design can not be excluded and it may be a reason for caution.

**Wider implications of the findings:** Our results demonstrate that ejaculatory abstinence period do not affect blastulation, ongoing pregnancy and live birth rates. The current findings discourage an abstinence time longer than 3 days due to its association with a higher abnormal fertilization rate.

**Trial registration number:** not applicable