

**Abstract citation ID:** deac107.088

**P-092 Investigating impacts of CoronaVac vaccination in males on in vitro fertilization: A propensity score matched cohort study**

**M. Wang<sup>1</sup>, L. Zhu<sup>1</sup>, L. Jin<sup>1</sup>**

<sup>1</sup>Tongji Hospital- Tongji Medical College- Huazhong University of Science and Technology, Reproductive Medicine Center, Wuhan, China

**Study question:** Does a history of SARS-CoV-2 vaccination (CoronaVac) in males influence male fertility, gamete and embryo development, and *in vitro* fertilization (IVF) outcomes?

**Summary answer:** CoronaVac vaccination in males may not have an adverse effect on patient's performance or the gamete and embryonic development potential during ART treatments.

**What is known already:** Vaccines against COVID-19 have been approved for emergency use in several countries and regions, while concerns about the potential negative effect of vaccines on fertility contributed to vaccine hesitancy. It is urgent to explore the effect of CoronaVac on human fertility to help to overcome vaccine hesitancy about possible fertility impairment.

**Study design, size, duration:** A retrospective cohort study enrolled couples undergoing IVF cycles between June and August 2021 at Reproductive Medicine Centre, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology. According to the history of SARS-CoV-2 vaccination in males, the participants were divided into the vaccination group and the non-vaccination group.

**Participants/materials, setting, methods:** A self-controlled study of semen analyses for males before and after CoronaVac vaccination was conducted. Baseline characteristics were matched using propensity score matching. Participants were categorized into the unexposed group (non-vaccination) and exposed group (vaccination), and the population was 271 for each. Semen parameters and IVF outcomes were the main outcomes.

**Main results and the role of chance:** Generally, no statistically significant differences were exhibited between the matched cohorts regarding embryo developmental parameters, including fertilization rate, cleavage rate, high-quality embryo rate, blastocyst formation rate, and available blastocyst rate, as well as clinical outcomes, such as implantation rate, biochemical pregnancy rate, and clinical pregnancy rate. Moreover, males after vaccination seemed to have fluctuated semen parameters including increased semen volume, lower motility, and decreased normal forms of sperms, while the motile sperm counts were similar. In addition, all semen parameters were above the lower reference limits.

**Limitations, reasons for caution:** It was a single-center retrospective cohort study with a small sample size, and the men enrolled were suffering from

infertility, which limited the generalizability of the conclusions. In addition, the endpoint of the current is a confirmation of clinical pregnancy, a study with a longer period of follow-up was urgent.

**Wider implications of the findings:** Our findings suggested that CoronaVac vaccinations in males may not have adverse effects on patient's performance or the gamete and embryonic development potential during ART treatments. Larger studies among a wider population with longer follow-up in the future are required to support and validate our observations.

**Trial registration number:** not applicable