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P-624 The type of vaccine received against SARS-CoV-2 does not affect ovarian function in an Assisted Reproduction cycle

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Study question: Do the different types of vaccines against SARS-CoV-2 influence the results of an Assisted Reproduction treatment?

Summary answer: The type of vaccine administered against SARS-CoV-2 does not affect the results in women performing an Assisted Reproduction treatment.

What is known already: Since the COVID-19 pandemic was declared, the search for vaccines has become the priority, so its development has represented a step towards herd immunity in a short period of time. Despite this encouraging advance, vaccine hesitancy in reproductive-aged women has been heightened because of the spread of misinformation stating that COVID-19 vaccines will cause sterility. Due to the lack of information and the clinical relevance, the objective of this work was to evaluate the impact of the different types of vaccines on women's fertility.

Study design, size, duration: Retrospective and observational study during January-October 2021 in women vaccinated against SARS-CoV-2 and performing an Assisted Reproductive treatment in any of the 11 clinics belonging to the IVIRMA group in Spain. The Control group included patients performing a treatment during the same study period but who had not yet been vaccinated. The study was approved by an Institutional Review Board (2109-MADR-084-AR)

Participants/materials, setting, methods: All women, those who had received the complete vaccination schedule, regardless of the type of vaccine administered mRNA or viral vector, and women from the control group underwent the same ovarian stimulation protocol. The Assisted Reproduction treatment was performed with their own oocytes in all cases. Statistical analyses were performed using the Statistical Package for Social Sciences 19.0 (IBM Corporation, Armonk, NY, USA).

Main results and the role of chance: We included 510 patients distributed as follows: 13.5% (n = 69) received a viral vector vaccine either the adenovirus serotype 26 vector vaccine (Ad26.CoV2.S; Johnson & Johnson; n = 31) or the chimpanzee adenovirus vector vaccine (ChAdOx; AstraZeneca; n = 38). The remaining 86.5% (n = 441) received an mRNA vaccine from either Pfizer-BioNTech (n = 336) or Moderna (n = 105). Sample size for control group was n = 1190

Our results showed that women vaccinated with Johnson & Johnson have a higher average age (39.7 ± 4.3) than the other groups, although no statistical difference was observed (p = 0.072); that is, AstraZeneca (36.8 ± 1.7), Moderna (35.7 ± 1.5), Pfizer (34.6 ± 1.6) and the control group (37.8 ± 2.7). This circumstance did not affect other parameters such as the days of stimulation (p = 0.336) or the doses of FSH administered (p = 0.392), where no statistical differences were recorded between the vaccinated and the control group. Finally, the number of oocytes were as follows, Johnson & Johnson (9.2 ± 2.6), AstraZeneca (7.7 ± 1.2), Moderna (11.3 ± 1.8), Pfizer (12.6 ± 1.0), and the control group (10.2 ± 1.5), p = 0.06.

Limitations, reasons for caution: This is an observational study, and thus possible confounders cannot be excluded entirely. More data are needed to draw firm conclusions, and it will be critical to increase the sample size to check if the results observed in this work remains in the general population

Wider implications of the findings: This is the first study to assess whether the type of vaccine administered against SARS-CoV-2, mRNA, or viral vector, affects ovarian function in ART. These early findings suggest no measurable detrimental on ovarian response regardless of vaccine received.

Trial registration number: not applicable