

POSTER DISCUSSION SESSION**SESSION 71: GSCAIF**

Tuesday, 5 July 2022

Amber 6

17:30 - 18:00

Abstract citation ID: deac105.142**P-710 COVID-19 Vaccination and Infertility Treatment Outcomes****S. Avraham¹, A. Kedem¹, H. Zur¹, M. Youngster¹, O. Yaakov¹, G. Yerushalmi¹, I. Gat¹, Y. Gidoni¹, M. Baum², A. Hourvitz¹, E. Maman²**¹Shamir Medical Centre- affiliated with the Sackler Faculty of Medicine- Tel Aviv University- Israel., IVF Unit- Department of Obstetrics and Gynecology, tel aviv, Israel²Sheba Medical Centre- affiliated with the Sackler Faculty of Medicine- Tel Aviv University- Israel and IVF Unit- Herzliya Medical Centre- Herzliya- Israel., IVF Unit- Department of Obstetrics and Gynecology, Herzliya, Israel**Study question:** Is there an influence of mRNA COVID-19 vaccine on ovarian response and in vitro fertilization (IVF) treatment outcomes?**Summary answer:** COVID-19 mRNA vaccine did not affect the ovarian response nor pregnancy rates in IVF treatment**What is known already:** Studies demonstrated that infection with COVID-19 during pregnancy increased the risk of the development of severe disease and pregnancy complications.

A recent meta-analysis of international data showed a declining tendency to be vaccinated, possibly influenced by public concerns over safety of the vaccines. Specifically, concerns were raised about a possible detrimental effect on fertility and pregnancy outcomes due to similarity between syncytin-1, a human placental fusion protein, and the SARS-CoV-2 spike protein expressed after administration of the COVID-19 vaccine.

To date, only one retrospective analysis on 36 infertility patients has assessed the influence of COVID-19 vaccination on IVF treatment outcomes.

Study design, size, duration: A retrospective cohort study. The study included a total of 400 patients, 200 vaccinated women and 200 age matched non-vaccinated women, undergoing IVF treatments during January-April 2021.**Participants/materials, setting, methods:** All vaccinated women aged 20-42 that underwent IVF treatment cycles between January 1, 2021 and April 31 2021 were included. All participants completed two doses of the BNT162b2 (Pfizer-BioNTech) vaccine at least two weeks before starting ovarian stimulation. The study group was matched by age to non-vaccinated patients that underwent IVF treatments during the same period. Patients with a positive COVID 19 test in the past were excluded.**Main results and the role of chance:** Two hundred patients underwent oocyte retrieval 14-68 days after receiving COVID-19 vaccination. No difference was found between vaccinated and non-vaccinated patients in mean number of oocytes retrieved per cycle (10.63 vs 10.72, $p=0.93$). Among 128 vaccinated patients and 133 non-vaccinated patients that underwent fresh

embryos transfers, no difference was demonstrated in clinical pregnancy rates (32.8% vs. 33.1%, p-value=0.96), 42 and 44 pregnancies respectively. The fertilization rates and mean number of cryopreserved embryos were similar between the two groups in freeze all cycles (55.43% vs. 54.29%, p-value=0.73), (3.59 vs. 3.28, p-value=0.80). Among vaccinated patients and non-vaccinated patients that underwent fresh embryos transfers, no difference was demonstrated in the fertilization rate (64.81% vs. 61.98%, p=0.51), and transferred embryos quality. Regression models applied demonstrated no effect of the vaccine on oocyte yields and pregnancy rates.

Limitations, reasons for caution: Limitations include retrospective nature and different treatment protocols.

Additional limitation is the lack of information about vaccination status of the partners. One would assume that if unbalanced, the proportion of vaccinated males would be higher in the study group as partners tend to choose similarly in regard to vaccine administration.

Wider implications of the findings: Women should consider vaccination prior to their attempts to conceive via IVF treatments.

Trial registration number: ASF-0094-21