Vaccine uptake in the obstetric population – too little too late?

Neil Brown,[1] Malcolm Broom,[1] Roy Williamson,[2] Rachel Kearns[1]
[1]Princess Royal maternity Unit, [2]Royal Alexandra Hospital; NHS Greater Glasgow & Clyde

Obstetric ANAESTHESIA
Princess Royal Maternity

NHS Greater Glasgow and Clyde

Introduction

In April 2021, the UK's Joint Committee for Vaccination and Immunisation (JCVI) recommended pregnant women should be vaccinated against SARS-CoV-2. Vaccine uptake amongst this population is poor,[1] though reasons for this remain poorly understood.[2] We aimed to characterise the uptake of SARS-CoV-2 vaccination in patients admitted to two inner-city maternity units (~8500 deliveries per year).

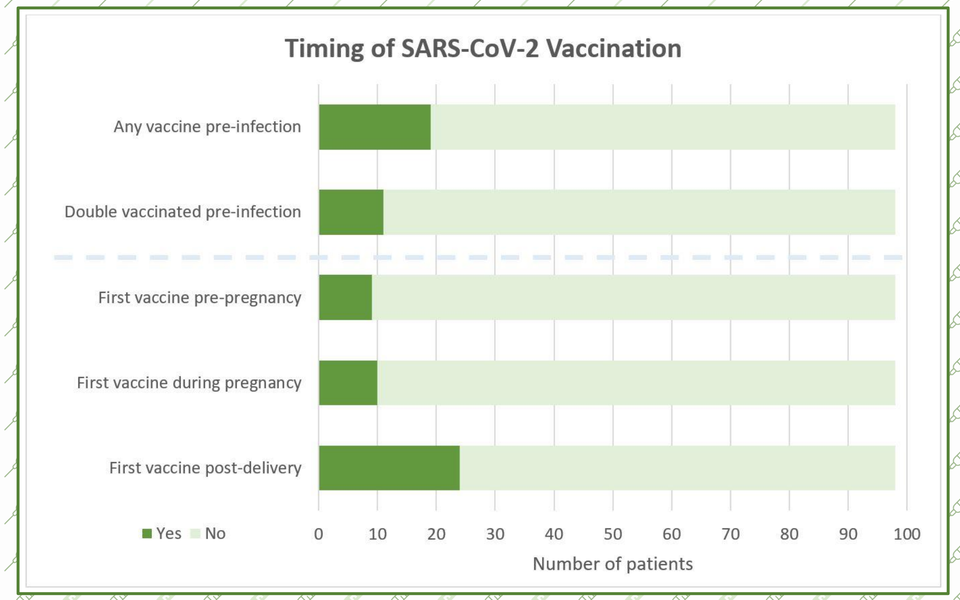
Methods

Caldicott guardian approval was obtained and formal ethical review was waived by the West of Scotland Research Ethics service. All obstetric patients admitted to Princess Royal Maternity, Glasgow, and Royal Alexandra Hospital, Paisley, between 1 May 2021 and 23 January 2022 and who tested positive for SARS-CoV-2 were included. Data were analysed using Microsoft Excel.

Results

A total of 98 patients were included:

- 19/98 patients (19.4%) had received any SARS-CoV-2 vaccine dose prior to testing positive with 9/19 (47.4%) receiving their first vaccine pre-pregnancy
- 11/98 patients (11.2%) had 2 vaccines prior to testing positive
- No patients had received three doses prior to testing positive
- O_2 was required in 32/79 (41%) of unvaccinated patients and 3/19 (16%) who had received any vaccines prior to admission
- No double-vaccinated patients required O_2 or critical care
- 56 patients (57%) remain unvaccinated



	n = 98
Age at admission, median [IQR]	29.5 [26 – 34]
Gestation at admission, median [IQR]	34.0 [27 – 38]
White ethnicity, n (%)	74 (75.5%)
Residing in most deprived quintiles SIMD1 or SIMD2, n (%)	73 (74.4%)
Relative to coronavirus infection:	
Any vaccine prior to positive coronavirus test, n (%)	19 (19.4%)
Two vaccines prior to positive coronavirus test, n (%)	11 (11.2%)
Any vaccine after coronavirus infection	31 (31.6%)
Relative to pregnancy:	
Any vaccine prior to pregnancy, n (%)	9 (9.2%)
Any vaccine during pregnancy, n (%)	12 (12.2%)
Any vaccine after pregnancy, n (%)	30 (30.6%)

Discussion

Vaccine uptake was poor in this inner-city cohort of pregnant and recently-pregnant women, with only 19.4% and 11.2% of patients having received one or two doses of vaccine respectively at the time of hospital admission. Of the 19 patients who had received any vaccines prior to SARS-CoV-2 infection, just over half received this during pregnancy.

In a Scottish, population-based cohort study, 42.8% of all women giving birth in October 2021 had received one dose and 32.3% of women had received two vaccine doses, with lower vaccine uptake associated with socioeconomic deprivation.[1] The lower rates seen in our cohort may reflect that we included only patients admitted to hospital, and that unvaccinated status is associated with hospital admission, or that our population was heavily skewed towards the lower socioeconomic groups (with 74.4% of patients residing in the two most deprived quintiles). Our data supports the need for at least two vaccines to provide effective protection against severe SARS-CoV-2 .

Over half of the patients in our study remain unvaccinated. Barriers to vaccination are complex and may include concerns about the effect of vaccination on the fetus, or equivalent immunity being acquired following SARS-CoV-2 infection. Measures to address low vaccine uptake in the obstetric population are urgently required.

References:
(1) Stock SJ, Carruthers J, Calvert C, et al. SARS-CoV-2 infection and COVID-19 vaccination rates in pregnant women in Scotland. Nat Med 2022:1–9. Doi: 10.1038/s41591-021-01666-2.
(2) Iacobucci G. Covid-19 and pregnancy: vaccine hesitancy and how to overcome it. BMJ 2021;375:n2862. Doi: 10.1136/bmj.n2862.