SARS-CoV-2 in pregnancy: symptomatic pregnant women are only the tip of the iceberg

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Objectives: Pregnant women present a unique challenge during this COVID-19 pandemic as they have multiple encounters with healthcare workers (HCW) and most are admitted to hospital for birth. Universal screening of this population, therefore, has several potential benefits: reducing the risk of asymptomatic transmission to HCW and other pregnant women; early patient isolation and use of appropriate personal protective equipment; and improving understanding of perinatal transmission.\textsuperscript{1,2} The prevalence of SARS-CoV-2 in pregnant women admitted for delivery in one New York hospital between March 22 and April 4, 2020 was 33/215 (15.4%) and 29/33 (88%) were asymptomatic.\textsuperscript{3} Such a high proportion of asymptomatic infection was unexpected and raises questions about infection control practices in hospitals that do not routinely screen for SARS-CoV-2 in women presenting for birth. It is also not known whether this rate is generalizable to other pregnant populations.

Study Design: In London, UK, pregnant women admitted to the Portland Hospital for Women and Children have been universally screened for SARS-CoV-2 using RT-PCR (nasopharyngeal swab) since March 27, 2020. The Portland Hospital provides maternity care to ~1300 women/year. During the COVID-19 pandemic, the hospital supported National Health Service maternity units by planned cesarean deliveries. Women who had a positive result and their newborns received care as per hospital protocol for COVID-19.

Results: As of April 20, 2020, 129 women were tested on admission; 9 (7.0%) tested positive and 8/9 (88.9%) were asymptomatic. One symptomatic woman with fever and cough was isolated from admission and subsequently tested positive. The median age of the women was 34 years and proportion of SARS-CoV-2 positive asymptomatic pregnant women aged >34 years was 7.0% (4/57) compared to 5.6% (4/67) ≤34 years (p=0.75) (Figure). The proportion of SARS-CoV-2 asymptomatic women was 6.3% (5/79) in Caucasian, 20% (2/10) in Asian, 3.4% (1/29) in women of mixed/other ethnic origins and none of 10 Afro-Caribbean women. We assessed quintiles of deprivation based on postcode; 1/26 (3.8%) in quintile group 5 (most deprived) tested positive, compared to none in quintile group 1 (least deprived) (n=17) (P>0.05). None of the asymptomatic SARS-CoV-2 positive women had co-morbidities. Only one woman had asthma and was tested negative for SARS-CoV-2. None of the positive asymptomatic women developed COVID-19 symptoms or adverse perinatal outcomes (median length of stay, 2 days). All babies were well at birth and at discharge.

Conclusions: In London, during the peak of the COVID-19 pandemic, 7.0% of pregnant women attending hospital for delivery were positive for SARS-CoV-2 and 8 of the 9 positive
women were asymptomatic. The prevalence of SARS-CoV-2 infection was half that reported in New York: possible explanations include lower community transmission in London which did not experience the same intensity of the pandemic as New York, and differences in case mix of women attending the two hospitals, including ethnicity mix, which has been identified as a significant factor associated with risk, severity and outcomes of COVID-19.\textsuperscript{4}

Remarkably, though, the proportion of SARS-CoV-2 positivity women who were asymptomatic was similar between the two cohorts.\textsuperscript{3} Whilst it is reassuring that all the asymptomatic women and their babies remained well, the high proportion of asymptomatic SARS-CoV-2 positive women raises important questions about infection control and nosocomial transmission since severe disease and fatal outcomes have been reported among both HCW and some pregnant women.\textsuperscript{5} Our findings add to the growing body of evidence showing high rates of asymptomatic infection in healthcare settings and highlight a critical need for universal screening of pregnant women.

REFERENCES:


Symptom Status and SARS-CoV-2 Test Results

New York
- SARS-CoV-2 Negative (84.6%)
- Asymptomatic SARS-CoV-2 positive (13.5%)
- Symptomatic SARS-CoV-2 positive (1.9%)

London
- SARS-CoV-2 Negative (93.0%)
- Asymptomatic SARS-CoV-2 positive (6.2%)
- Symptomatic SARS-CoV-2 positive (0.8%)

Bar chart showing:
- Caucasian: 6.3% asymptomatic, 0% symptomatic
- Black: 6% asymptomatic, 0% symptomatic
- Asian: 20% asymptomatic, 0% symptomatic
- Mixed/others: 3.4% asymptomatic, 0% symptomatic