COVID-19 maternal and perinatal outcomes: living systematic review and meta-analysis (Update)

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BACKGROUND:

- Since the first case of COVID-19, **morbidity and mortality have markedly increased**. (1)
- Pregnant women specifically are considered a **high risk group**, due to the additional risks to the neonate or themselves in the pre-natal and post-natal period. (2)
- With new evidence on COVID -19 in pregnancy. emerging all the time, **regular literature updates are required.**

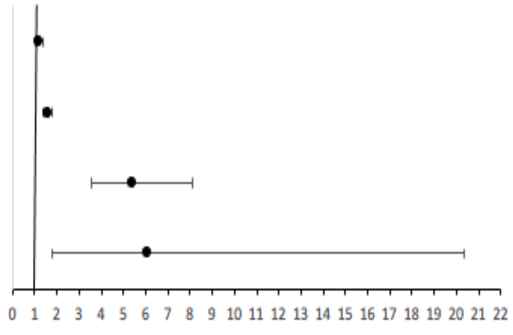
METHODS:

- **DATABASES**: Medline, Embase, Cochrane, WHO, from **1 December 2019 to 27 April 2021**
- **INCLUSION: Cohort studies** reporting maternal and perinatal outcomes in pregnant and recently pregnant women with **suspected or confirmed COVID-19.**
- **EXTRACTION**: Data was extracted and quality assessed by at least **two independent researchers weekly**.
- **ANALYSIS:** Random effects meta-analysis was performed, with estimates pooled as **odds ratios** (OR) with 95% **confidence intervals** (CI).

RESULTS:

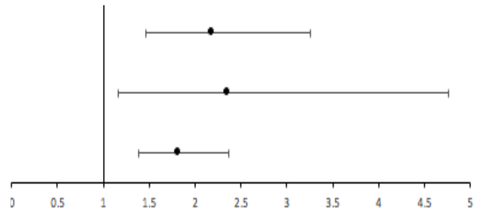
Maternal outcomes in pregnant and recently pregnant women with Covid-19 compared to pregnant and recently pregnant women without COVID -19

Maternal outcome	No. of studies	OR (95% CI)
Caesarian section	53	1.17 (1.01-1.36
Pre-term birth	48	1.57 (1.36-1.81)
ICU admission	21	5.41 (3.59-8.14)
Maternal death	21	6.09 (1.82-20.38)



Neonatal outcomes in women with COVID-19 compared to neonates born to women without COVID-19.

Perinatal outcome	No. of studies	OR (95% CI)
Neonatal ICU	20	2.18 (1.46-3.26)
Neonatal death	21	2.35 (1.16-4.76)
Still birth	25	1.81 (1.38-2.37)



- **435 studies** were included
- **926,232** pregnant women and **9,466** neonates

The odds of **all cause mortality, maternal admission to ICU, C section, pre-term birth, still birth, neonatal death, NICU admission** were **higher in pregnant** women **with COVID-19 and neonates born to COVID-19 positive mothers** compared to pregnant women without COVID-19 and neonates born to mothers without COVID 19.

In pregnant women with COVID-19 the overall rate of:

- **Pre-term birth** = 17%
- **Still birth** = 0.4%.
- **Neonatal death** = 0.03%

25% of **neonates** born to **COVID-19 positive** mothers were admitted to **NICU.**

Compared with non pregnant women rates of **ICU admission** and **invasive ventilation** were **higher** in **pregnant** women with **COVID-19.**

DISCUSSION & CONCLUSION:

- Pregnant women with COVID-19 have **an increased risk of adverse maternal outcomes**
- **Findings remain consistent** compared with the original systematic review.
- Pregnant women should be **given information on the risks of COVID-19** and **measures should be taken to prevent exposure** e.g. through vaccination
- **Healthcare professionals should be aware of this** to ensure appropriate escalation of care.
- Future research is required specifically concerning **vaccines and variants**.

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