

Introduction

- SARS-CoV-2 has been associated with poor maternal complications
- Few studies exist that specifically compare maternal outcomes across the waves and variants of the pandemic
- We sought to determine which COVID-19 wave was associated with worse maternal outcomes

Methods

- Retrospective study of pregnant patients diagnosed with SARS-CoV-2 between 3/6/20 and 2/28/22
- 3 distinct waves of the pandemic were identified: Wild type (3/6/20-12/31/20), Alpha/Delta (1/1/21-12/14/21), and Omicron (12/15/21-2/28/22)
- Baseline demographics and clinical outcomes collected
- Primary outcome was development of maternal COVID-19 complications (venous thromboembolism, pneumonia, acute respiratory failure, stroke, myocardial infarction, acute renal or hepatic failure, and transaminitis)
- Statistical analysis performed using Chi square tests, student T-tests, and logistic regression modeling, with statistical significance defined as $p < 0.05$.

Results

- 654 patients included in the analysis with 190 (29%) patients in the wild type wave, 207 (31%) patients in the Alpha/Delta wave, and 257 (39%) patients in the Omicron wave
- Baseline demographics are shown in Table 1
- Those diagnosed during the wild type wave had statistically significant higher odds of maternal complications compared to Omicron wave (OR 22.9 (95% CI 2.9-177.4))
- Patients in the Alpha/Delta wave had statistically significant higher odds of maternal complications compared to those in the Omicron wave (OR 10.6 (95% CI 1.3-85.1))
- The incidence of pneumonia was 7.4% during the wild type wave versus 4.3% in Alpha/Delta versus 0.4% in the Omicron wave ($p < 0.001$)
- Rates of other maternal complications are shown in Figure 1
- There were no cases of stroke, myocardial infarction, acute renal or hepatic failure in the cohorts.

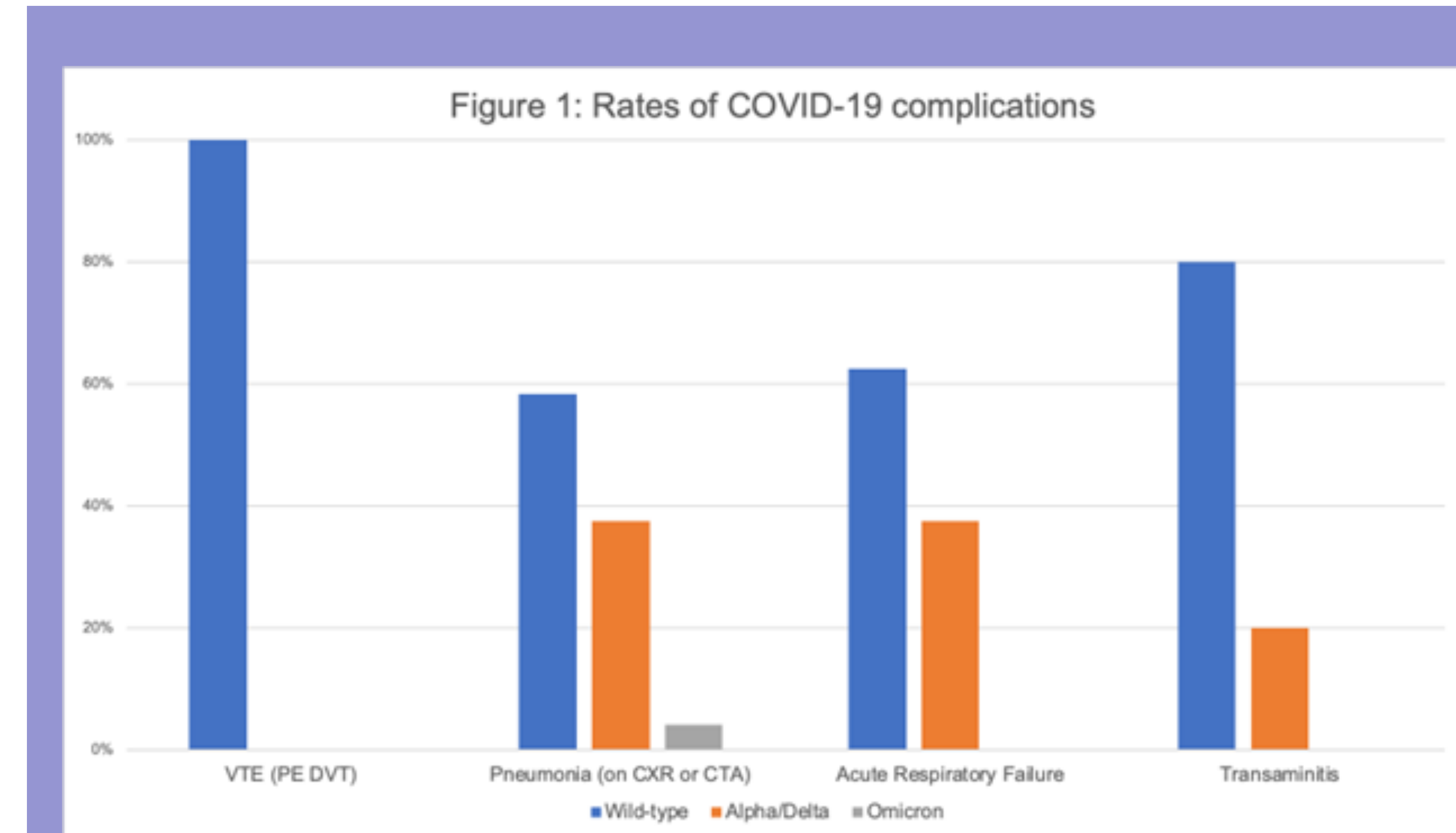
Tables/Graphs

	COVID WAVE			P-Value
	Wild-type	Alpha/Delta	Omicron	
Age	29.97 +/- 5.6	31.65 +/- 12.8	31.08 +/- 5.2	0.136
BMI	31.92 +/- 6.3	31.32 +/- 6.0	32.28 +/- 7.1	0.302
Gravidity	2.98 +/- 1.8	2.84 +/- 1.6	2.84 +/- 3.2	0.797
Parity	1.46 +/- 1.4	1.12 +/- 1.1	1.23 +/- 1.0	0.016
GA at diagnosis	26.55 +/- 11.0	26.01 +/- 9.3	24.22 +/- 9.0	0.029
GA at delivery	37.36 +/- 5.1	38.5 +/- 1.8	37.94 +/- 3.1	0.008

Table 1: Demographic characteristics presented as means +/- SD

Discussion

- Patients diagnosed in wild type wave were 10-20 times more likely to experience a maternal complication compared to patients diagnosed during the Omicron wave
- Incidence of specific complications was variable during each wave of the pandemic



Maternal complications of COVID were higher during the Wild type and Alpha/Delta waves compared to the Omicron wave.

