

Introduction:

COVID-19 became a global pandemic at the beginning of 2020 with significant prenatal morbidity and mortality.

Rates of intrauterine fetal death (IUFD) increased during that time frames

Placental vascular malperfusion is associated with COVID infection

Aim:

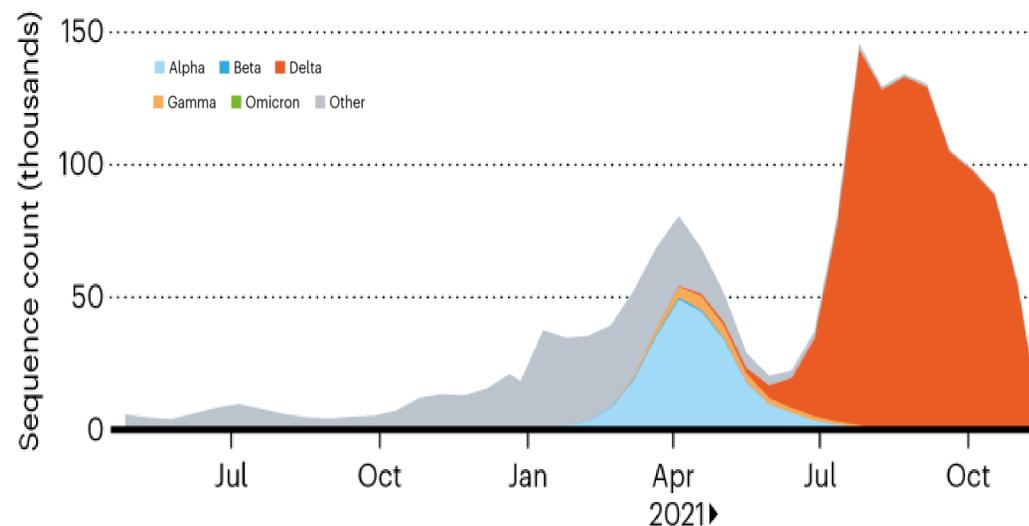
- To analyze the rates of fetal demise as they relate to the waves and variants of infection during the pandemic.

Methods:

- Retrospective cohort study at single community hospital looking at rates of IUFDs in women prior to pandemic and during pandemic
 - COVID cohort: Feb. 2020 to Nov. 2021
 - Pre-COVID cohort: Jan. 2017 to Jan. 2020
- Waves of the pandemic were defined by CDC data:
 - First (unsequenced, Feb. 2020-Jun. 2020)
 - Second (unsequenced, Jul. 2020-Oct. 2020)
 - Third (alpha, Nov. 2020-May 2021)
 - Fourth (delta, Jun. 2021-Nov. 2021).
- Demographic information and placental pathology was compared using t-test for continuous and chi-squared for categorical variables.
- Rates of IUFD were analyzed using odds ratio with 95% confidence intervals

Results:

Graph 1: Dominant variants in United States



Courtesy of: https://media.nature.com/lw767/magazine-assets/d41586-021-03694-x/d41586-021-03694-x_19945010.png

Graph 2: Fetal demises per month during COVID pandemic

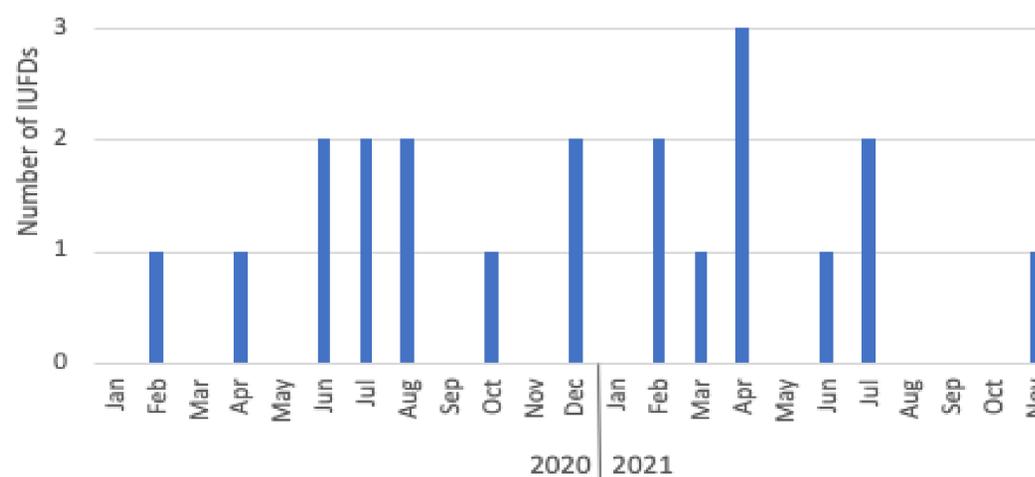


Table 1: IUFD rates during COVID pandemic waves

	IUFDs	Livebirths	IUFD rate per 1000 livebirths	Odds Ratio (compared to pre-COVID cohort)
Pre-COVID (2018-2019)	12	4212	2.9	
COVID Cohort (February 2020-August 2021)	20	3435	5.8	2.04 (1.33-2.76)
First Wave	4	848	4.8	1.71 (0.57-2.84)
Second Wave	5	712	7.0	2.44 (1.40-3.49)
Third Wave (Alpha)	8	1064	7.5	2.21 (1.31-3.11)
Fourth Wave (Delta)	3	646	4.6	1.63 (0.36-2.90)

Conclusions:

- The rate of IUFDs was nearly double during the second and third wave of COVID (OR 2.44 and 2.21, respectively)
- The alpha wave was associated with the highest rate of IUFDs (7.5 per 1000 livebirths)
- The rate of IUFDs in the first 18 months of the pandemic (5.8 per 1000 livebirth) was significantly greater than in the two years prior to the pandemic (2.9 per 1000 livebirth)
- The COVID cohort was more likely to have placental pathology with placental weight <10th percentile

Discussion:

Rates of IUFDs increased during the pandemic and progressively worsened with the dominant variant of the second and third wave. Further research is needed to assess the determinants and preventability of these fetal deaths.

References:

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