

Indirect Impacts of the COVID-19 Lockdown on Preterm Birth in Women with Twin Pregnancies in Melbourne in 2020

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BACKGROUND

- In 2020, metropolitan Melbourne implemented one of the longest and strictest lockdowns recorded globally with significant impacts on antenatal care provision.
- Twin pregnancies may be particularly susceptible to changes in antenatal care due to their high background risk.

AIM

- This study aims to evaluate the impacts of lockdown on the rates of preterm birth (PTB) and other perinatal outcomes in women with twin pregnancies.

METHODS

- We undertook a multicentre retrospective cohort study of all twin births from 20 weeks gestation born in public maternity hospitals in metropolitan Melbourne from January 2018 to March 2021.¹
- Multivariate logistic regression was used to calculate the adjusted odds ratios (aOR) for perinatal outcomes among twin pregnancies exposed and unexposed to the lockdown period commencing 23 March 2020, adjusting for multiple covariates.
- Statistical significance was set at $p < 0.05$.

RESULTS

- We included 3294 infants from twin pregnancies (Figure 1).
- There was a statistically significant decrease in total PTB <37 weeks from 68.85% to 63.25% during lockdown ($p = 0.018$), which was associated with trends to lower rates of both spontaneous and iatrogenic PTB (Table 1).

Figure 1: Flowchart of study population

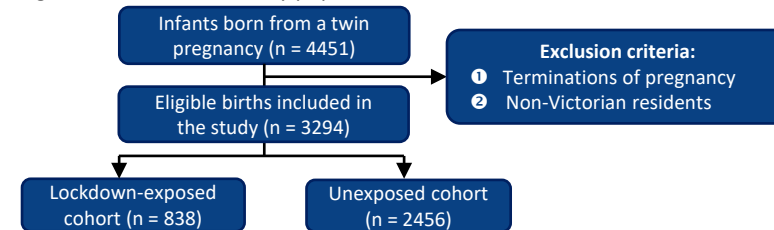


Table 1: Outcomes, per twin pregnancy, exposed and unexposed to lockdown

Outcome	Exposed	Unexposed	aOR	P
PTB <37 weeks, n (%)				
Total	530 (63.25)	1691 (68.85)	0.81	0.018
Spontaneous	153 (18.26)	501 (20.40)	0.85	0.134
Iatrogenic	377 (44.99)	1190 (48.45)	0.92	0.287
PTB <34 weeks, n (%)				
Total	168 (20.05)	578 (25.33)	0.84	0.090
Spontaneous	85 (10.14)	260 (10.59)	0.95	0.721
Iatrogenic	83 (9.90)	318 (12.95)	0.78	0.062
PTB <28 weeks, n (%)				
Total	46 (5.49)	128 (5.21)	1.22	0.274
Spontaneous	25 (2.98)	63 (2.57)	1.29	0.306
Iatrogenic	21 (2.51)	65 (2.65)	1.16	0.572
Stillbirth, n (%)				
Any stillbirth	12 (1.43)	38 (1.55)	0.95	0.887
Single demise	10 (1.19)	28 (1.14)	1.12	0.762
Double demise	2 (0.24)	10 (0.41)	0.63	0.549
Any birthweight <3 rd centile (single or double)	46 (5.49)	142 (5.78)	0.96	0.800
Total iatrogenic birth for fetal compromise, n (%)	119 (14.20)	494 (20.11)	0.65	<0.0001
Onset of labour, n (%)				
No labour	499 (59.55)	1367 (55.66)	1.19	0.039
Induction of labour	170 (20.29)	526 (21.42)	0.92	0.448
Spontaneous onset of labour	169 (20.17)	563 (22.92)	0.84	0.072
Delivery, n (%)				
Vaginal	108 (25.78)	353 (28.75)	0.80	0.022

Table 2: Neonatal outcomes, per infant, exposed and unexposed to lockdown

Outcome	Exposed	Unexposed	aOR	P
NICU admissions, n (%)	174 (20.76)	498 (20.28)	1.06	0.56
SCN admissions, n (%)	319 (38.07)	1063 (43.28)	0.81	0.01
5-minute APGAR scores <7, n (%)	55 (6.58)	176 (7.19)	0.93	0.66

- There was a non-significant decrease in PTB <34 weeks during lockdown, primarily due to a trend towards fewer iatrogenic deliveries <34 weeks (Table 1).
- Special care nursery (SCN) admissions declined significantly from 43.28% to 38.07% ($p = 0.01$) (Table 2).
- No statistically-significant differences in stillbirth, severe fetal growth restriction (FGR) (birthweight <3rd centile), 5-minute APGAR scores <7 or neonatal intensive care unit (NICU) admissions were observed (Tables 1 and 2).
- There was a significant increase in births without labour (elective caesarean section (CS)) and a significant reduction in vaginal deliveries during the study period.

CONCLUSION

- Lockdown exposure was associated with a significant reduction in PTB <37 weeks and SCN admissions without any apparent increase in severe FGR or stillbirths.
- The increase in elective CS during lockdown may reflect a pre-existing trend or a response to pandemic conditions, such as women opting for increased predictability over their birth plans.
- Understanding the factors driving the lower PTB rates and SCN admissions may have important lessons for obstetric management of twins in the post-pandemic period.

REFERENCE: 1. Hui L, Marzan MB, Potenza S, Rolnik DL, Said JM, Palmer KR et al. Collaborative maternity and newborn dashboard (CoMaND) for the COVID-19 pandemic: a protocol for timely, adaptive monitoring of perinatal outcomes in Melbourne, Australia. *BMJ Open*. 2021;11:e055902.

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