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Rates of preterm birth in multiparous women with congenital uterine anomalies

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OBJECTIVE:

The incidence of congenital uterine anomalies (CUAs) is estimated to be as high as 7% in the general population.¹ CUAs are associated with adverse pregnancy outcomes including spontaneous preterm birth (PTB) and preterm premature rupture of membranes.^{2,3} However, the risk for PTB (new or recurrent) among multiparous women with CUAs is unknown. Thus, we sought to describe the risk for PTB among multiparous women with CUAs, stratified by their pregnancy history.

STUDY DESIGN:

This was a retrospective cohort study of multiparous women with CUAs who delivered at 1 of 2 tertiary healthcare systems from 2013 to 2019. Women with nonanomalous, singleton gestations with 1 previous pregnancy that reached 16 weeks' gestation were included. The demographic variables, obstetrical history, antenatal course, and delivery outcomes were abstracted from the electronic medical record system. The primary outcome was PTB at

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<37 weeks' gestation. Secondary outcomes included PTB at <34 weeks' gestation and the median gestational age at delivery. Women with 1 previous PTBs were compared with those with no previous PTBs using Wilcoxon rank sum, analysis of variance, Fisher's exact, and chi-square tests in addition to Kaplan-Meier survival curves. A logistic regression analysis was performed to evaluate the relationship between previous PTBs and recurrent PTBs. This study was deemed exempt by the institutional review boards of the Duke University Medical School and University of North Carolina School of Medicine.

RESULTS:

Of the 122 multiparous women with CUAs, more than one-third ($n=48$; 39.3%) had a previous PTB. The most common CUA was bicornuate (43.4%) followed by septate (27.9%), unicornuate (11.5%), uterus didelphys (10.7%), and arcuate (6.6%). The demographic and obstetrical data are shown (Table). The rates of PTB at <37 weeks' gestation and PTB at <34 weeks' gestation were higher among women with a history of previous PTB (45.8% vs 25.7%; $P=.02$ and 27.1% vs 12.2%; $P=.04$, respectively). Previous PTB was associated with recurrent PTB with an adjusted odds ratio (aOR) of 2.74 (95% confidence interval [CI], 1.18–6.35). Following exclusion of women with an arcuate uterus, often considered as a variant of normal, previous PTB remained associated with recurrent PTB (aOR, 3.00; 95% CI, 1.28–7.02). Multiparous women with a history of PTB delivered at an earlier gestational age than those with previous term deliveries only (median, 37.1; interquartile range [IQR], 30.9–38.4 vs median, 39.0; IQR, 36.9–39.4; $P=.002$).

CONCLUSION:

Multiparous women with known CUAs—regardless of pregnancy history—are at high risk for PTB. Among women with only previous term deliveries, the risk for PTB was high; 1 in 4 delivered at <37 weeks' gestation and 1 in 8 delivered at <34 weeks' gestation. When compared with the published rate of recurrent PTB in multiparous women without CUAs (20%), the rate of recurrent PTB in this population of women with CUAs was much higher (nearly 50%).^{4,5} Based on these data, all multiparous women with CUAs, regardless of pregnancy history, should be counseled about the risk for PTB in subsequent pregnancies. Future studies should investigate the utility of current prophylactic treatments for the prevention of prematurity among women with CUAs. ■

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TABLE

Demographic and obstetrical data stratified by pregnancy history

Characteristic	1 previous preterm birth, n=48 (%)	1 previous term birth, n=74 (%)	P value
Maternal demographics			
Median maternal age at delivery, y (IQR)	31.3 (27.4–36.6)	34.5 (29.2–36.8)	.35
Black race	5 (10.4)	10 (13.5)	.61
Hispanic ethnicity	11 (22.9)	13 (17.6)	.47
Median maternal BMI at first OB visit, kg/m ² (IQR)	27.7 (23.8–32.8)	26.4 (23.7–33.6)	.81
Tobacco use	6 (12.8)	2 (2.7)	.06
Chronic hypertension	6 (12.8)	9 (12.2)	.92
Obstetrical characteristics			
Transvaginal cervical length <25 mm ^a	5 (13.9)	4 (8.9)	.50
Received 17-OHCP	11 (28.2)	1 (11.1)	.42
Received vaginal progesterone	4 (10.3)	2 (4.1)	.40
Cerclage	7 (14.6)	2 (2.7)	.03
Obstetrical outcomes			
Delivery at <37 wk gestation	22 (45.8)	19 (25.7)	.02
Delivery at <34 wk gestation	12 (27.1)	9 (12.2)	<.001
Median gestational age at delivery, wk (IQR)	37.1 (30.9–38.4)	39.0 (36.9–39.4)	.002

Data are expressed as number (percentage), unless specified.

17-OHCP, 17-alpha-hydroxyprogesterone caproate; BMI, body mass index; IQR, interquartile range; OB, obstetrical.

^a Among women with 1 vaginal cervical length measurement between 16- and 24- weeks' gestation.

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