

during their pregnancy, these former cancer patients may still have increased risks of several adverse outcomes and as such, should be monitored closely in centers with access to specialized care. Consideration may be given to thromboprophylaxis and preterm birth prevention in this at-risk population.

**729 Incidence and maternal and fetal outcomes of acute leukemias in pregnancy: a population-based study**



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**OBJECTIVE:** Acute leukemias (ALs) are rare but aggressive malignancies. The goal of our study was to determine the incidence and maternal and fetal outcomes of pregnancies afflicted by ALs.

**STUDY DESIGN:** We performed a retrospective population-based cohort study on all births reported in the Health-care Cost and Utilization Project-Nationwide Inpatient Sample between 1999 and 2014. Using ICD9 codes, we established a cohort of births to women affected by ALs during pregnancy and compared it to a control group of unaffected deliveries. We calculated the incidence of ALs in pregnancy and conducted multivariate logistic regression to obtain adjusted odds ratios for several maternal and fetal outcomes among this population compared to a non-affected one.

**RESULTS:** We identified 291 maternal cases of ALs among 14 513 587 births, yielding an incidence of 2.01 per 100,000 births over the 16-year study period. There were approximately twice as many diagnoses of acute myeloid leukemia as compared to acute lymphoblastic leukemia. Pregnant women with ALs were more likely to be Caucasian, to deliver at an urban teaching hospital, and to have medicare. After adjusting for differing baseline characteristics and maternal and fetal deaths, we found that pregnant women with ALs were more likely to experience post-partum hemorrhage (OR 2.42, 95% CI 1.55-3.79), to suffer from disseminated intravascular coagulation (OR 24.85, 95% CI 14.48-42.62), to require transfusions (OR 54.43, 95% CI 41.98-70.58), to have wound complications (OR 4.73, 95% CI 2.23-10.03), and to experience venous thromboembolisms (OR 10.09, 95% CI 5.87-17.33). Maternal death (OR 284.63, 95% CI 157.81-513.39), preterm delivery (OR 2.42, 95% CI 1.74-3.36), and intrauterine fetal death (OR 3.72, 95% CI 1.65-8.39) were also more common in pregnant patients with ALs.

**CONCLUSION:** The incidence of ALs in pregnancy appears to be greater than what was previously believed. As it is associated with several adverse maternal and fetal outcomes, affected patients should be cared for in tertiary care institutions with access to high risk obstetrical specialists, hematologists, and neonatologists. Measures should be established to be adequately prepared for and try to mitigate the potential obstetrical emergencies and complications that may arise in this population.

**730 Gestational age at delivery of twins and the risk of perinatal death: population cohort study**



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**OBJECTIVE:** Twin pregnancy is associated with a threefold increase in perinatal mortality compared to singleton pregnancies. The aim of this study is to determine the week of gestation associated with the

lowest risk of perinatal death in twins to inform clinicians regarding timing of delivery.

**STUDY DESIGN:** A population based cohort study was performed with all twin pregnancies delivered at 34 weeks' gestation or greater from 1980-2015 in Scotland using routinely collected data. The primary outcome was perinatal mortality. To determine the association between gestation and perinatal death compared to ongoing pregnancies univariate and multivariate random effects modelling was performed. The study was approved by NHS Scotland Privacy Panel.

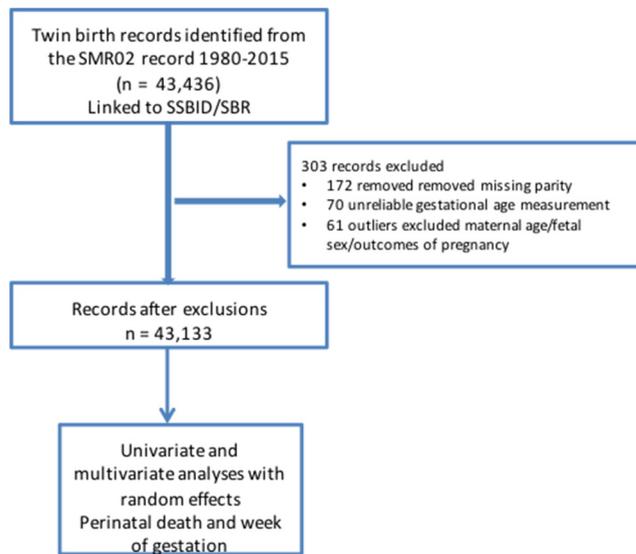
**RESULTS:** The study population comprised of 43 436 twin infants with a total of 472 stillbirths and neonatal deaths. 303 infants were excluded due to unreliable gestational age and outliers leaving a cohort of 43 133 twins (fig 1). Twin infants born at 34 weeks had an increased risk of perinatal death compared to ongoing pregnancies (adjusted odds ratio [OR], 3.27, 95% CI 2.34 – 4.57) as did delivery at 35 and 36 weeks (adjusted ORs 2.06 and 1.34, table 1). Delivery at 37 and 38 weeks were associated with lower risk of perinatal death compared to ongoing pregnancies (adjusted OR 0.52, 95% CI 0.37 – 0.71 and adjusted OR 0.50, 95% CI 0.36 – 0.69 respectively).

Table 1: Perinatal mortality at each week of gestation compared to ongoing pregnancies

	Ongoing pregnancies N with outcome/total no in group (%)	Delivered N with outcome/total no in group (%)	OR	P value	Adj OR*	P value
34	387/39359 (0.98)	85/3774 (2.25)	2.61 (1.95-3.50)	<0.001	3.27 (2.34-4.57)	<0.001
35	302/34228 (0.88)	85/5131 (1.66)	1.75 (1.32-2.32)	<0.001	2.06 (1.49-2.84)	<0.001
36	199/26172 (0.76)	103/8056 (1.28)	1.23 (0.95-1.60)	0.115	1.34 (1.01-1.80)	0.049
37	122/15247 (0.80)	77/10925 (0.70)	0.53 (0.40-0.71)	<0.001	0.52 (0.37-0.71)	<0.001
38	49/5115 (0.96)	73/10132 (0.72)	0.57 (0.43-0.76)	<0.001	0.50 (0.36-0.69)	<0.001
39	20/1854 (1.08)	29/3261 (0.89)	0.78 (0.41-1.21)	0.269	0.58 (0.36-0.96)	0.035

\*adj for age, parity, social class, fetal sex, year of birth

**CONCLUSION:** Gestation at delivery has a strong relationship with perinatal death. Twins born at 37 weeks' gestation had lower rates of perinatal death compared to ongoing pregnancies. This information should be used when counselling women. To our knowledge this is the largest UK cohort study of twins.



### 731 The risk of abnormal placentation and hemorrhage in subsequent pregnancy following primary elective caesarean delivery

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**OBJECTIVE:** China has the highest caesarean rate in the world largely driven by the overuse of elective caesarean delivery (CD). With termination of the one child policy in 2015, more women are now having a second pregnancy. We aimed to evaluate the relationship between mode of first delivery with subsequent placenta previa, placenta accreta/increta and significant postpartum hemorrhage (PPH).

**STUDY DESIGN:** This retrospective cohort study included women with 2 consecutive singleton deliveries between 2007-2017 at our institution if the women were nulliparous and delivered at term at the time of first delivery. The first pregnancy delivery mode was classified as (1) vaginal delivery, (2) antepartum CD without labor, or (3) intrapartum CD after onset of labor. Within these 3 groups, rates of placenta previa, placenta accreta/increta and PPH at the time of the second delivery were compared. Significant PPH was defined as hemorrhage requiring blood transfusion. Logistic regression was used to adjust for maternal characteristics, gestational week, obstetric complications, previous pregnancy loss, history of placenta previa, and the time interval between the two pregnancies.

**RESULTS:** A total of 8 208 women were analyzed. Most first deliveries were vaginal (n=5210, 63.5%), followed by antepartum CD (n=2432, 29.6%) and intrapartum CD (n=566, 6.9%). The incidence of placenta previa in subsequent deliveries differed by previous delivery mode: vaginal, 0.9%; antepartum CD, 2.0%; intrapartum CD, 1.6% (P<0.001). Similar differences were also observed with respect to placenta accreta/increta (0.5% vs 1.5% vs 0.9%, P<0.001) and PPH (0.6% vs 1.2% vs 0.4%, P=0.017). Compared to the previous vaginal delivery group, the antepartum CD group had increased risks of placenta previa (aORs 2.02, 95% CI 1.35-3.05), placenta accreta/increta (aOR 2.52; 95% CI 1.53-4.14) and PPH (aOR 1.78, 95%CI 1.14-2.98) in subsequent pregnancies. However, previous intrapartum CD was not significantly associated with increased risks of these complications.



**CONCLUSION:** Previous antepartum CD was associated with 2-fold increased risks of placenta previa, placenta accreta/increta and significant PPH in the second delivery compared to women with a prior vaginal delivery. The increased risks of subsequent abnormal placentation following primary antepartum CD may be important for counseling concerning non-medically indicated elective caesarean.

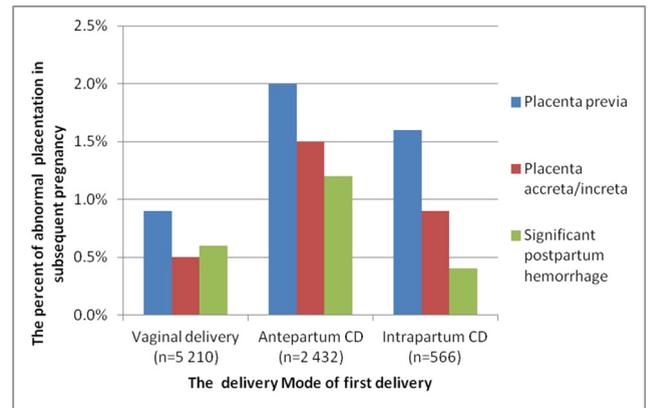


Table 1. The risk of abnormal placentation and hemorrhage according to mode of first delivery\*

OR ( 95% CI )	Vaginal delivery (n=5 210)	Antepartum CD (n=2 432)	Intrapartum CD (n=566)
Placenta previa ( unadjusted )	1	2.21(1.47-3.3) **	1.78(0.86-3.64)
Placenta previa ( adjusted )	1	2.02(1.35-3.05) **	1.62(0.79-3.33)
Placenta accreta/increta ( unadjusted )	1	2.86(1.75-4.68)**	1.65(0.63-4.29)
Placenta accreta/increta ( adjusted )	1	2.52(1.53-4.14) **	1.50(0.57-3.92)
Postpartum hemorrhage ( unadjusted )	1	1.95(1.17-3.25) **	0.59(0.14-2.48)
Postpartum hemorrhage ( adjusted )	1	1.78(1.14-2.98) **	0.56(0.13-2.35)

Analyses were adjusted for maternal age, insurance status, pre-pregnancy body-mass index,

type of conception, gestational week, obstetric complications including preeclampsia and diabetes,

previous pregnancy loss, history of placenta previa, the interval duration between two pregnancies.

\*\* P<0,05

### 732 Teenage pregnancy and long-term health of the offspring

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**OBJECTIVE:** To evaluate whether offspring of women delivering at a young age (<17 years old) are at an increased risk for long-term pediatric morbidity.

**STUDY DESIGN:** A retrospective population-based cohort study comparing singleton deliveries of women at different ages who delivered between the years 1991 and 2014 was conducted. Women were classified into three groups: < 17 years, 18–20 years, and a comparison group of 21-35 years old. The incidence of long-term (up to the age of 18 years) hospitalizations of the offspring due to cardiovascular, endocrine, hematological and respiratory morbidity was evaluated in the three maternal age groups. Multiple pregnancies

