age 40. For AMA women, particularly those with underlying comorbidities, short-term postpartum follow-up may be indicated to reduce maternal risk.

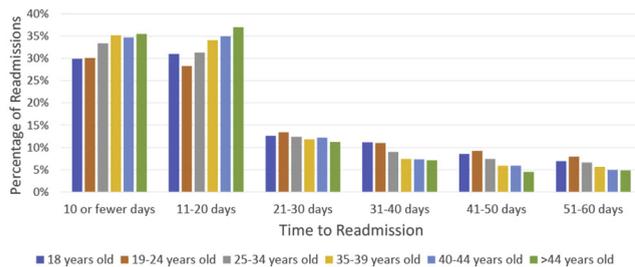Time from Delivery Discharge to Postpartum Readmission Stratified by Age

Table: Adjusted Analysis of All-Causes and SMM in Readmissions						
	60d All-Cause Readmission			SMM In Readmission		
Age	RR	95% CI	p-value	RR	95% CI	p-value
18 years old	1.18	1.15, 1.21	<0.01	0.87	0.79, 0.96	<0.01
19-24 years old	1.08	1.07, 1.09	<0.01	0.89	0.86, 0.92	<0.01
25-34 years old		Reference			Reference	
35-39 years old	1.11	1.09, 1.12	<0.01	1.09	1.04, 1.14	<0.01
40-44 years old	1.30	1.28, 1.32	<0.01	1.15	1.09, 1.22	<0.01
>44 years old	1.46	1.36, 1.56	<0.01	1.21	0.96, 1.51	0.10

Analysis adjusted by age in addition to other patient (insurance, median income by quartile), obstetric (systemic lupus, mode of delivery, diabetes, hypertension, kidney disease, postpartum hemorrhage), and hospital (teaching status, location) factors

385 What is the optimal strategy to date a twin gestation by ultrasound?

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OBJECTIVE: The most accurate means of dating a twin gestation by ultrasound is unknown. While limited evidence supports using the crown-rump length from the smaller fetus and 2nd/3rd trimester biometric assessments from the larger, societal guidelines favor the larger crown-rump length based on expert opinion. Hence, our objective was to evaluate which ultrasound measurements are most reliable for establishing a twin estimated date of confinement (EDC) through the midpoint of pregnancy.

STUDY DESIGN: We collected sonographic measurements for all non-anomalous twin gestations conceived with *in vitro* fertilization who received care at our facilities over a 10-year period. EDCs were calculated using Hadlock's formulas. The EDCs generated using the smaller, larger, and mean of the two crown rump lengths up to 13w6d and composite biometry up to 22w0d were compared to the true EDC based on the date of oocyte aspiration using paired t-tests. The ultrasound EDC closest to the true EDC was ascertained using Pearson's correlation coefficient.

RESULTS: Crown-rump lengths from 132 subjects and second trimester biometric assessments from 138 subjects were identified. While the smaller, larger, and mean crown-rump length calculations all accurately approximated the true EDC, the smaller performed marginally better (0.929 vs. 0.924 and 0.927, respectfully). For second trimester biometric assessments, the EDC using composite biometry from the smaller fetus had the strongest correlation (0.918 vs. 0.778 and 0.882, respectively).

CONCLUSION: The crown-rump length and second trimester composite biometry from the smaller fetus are most accurate in determining the EDC for a twin gestation by ultrasound.

386 A network meta-analysis of cervical ripening interventions

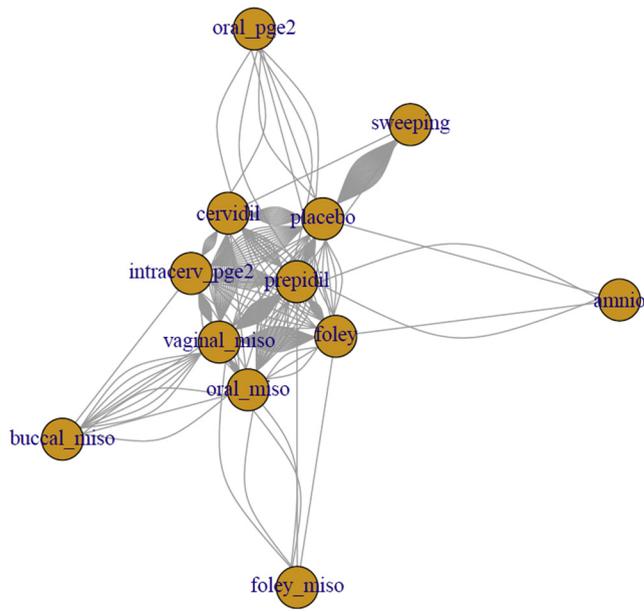Valery A. Danilack[1], Maureen G. Phipps[1], Hannah Kimmel[2], Thomas A. Trikalinos[2]
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OBJECTIVE: Prior studies and reviews of cervical ripening interventions to initiate labor induction focused on pair-wise comparisons of interventions with regard to select outcomes, making it difficult to establish an overall hierarchy of ideal approaches. We synthesized evidence from a systematic review into a network of 12 cervical ripening interventions and 7 outcomes.

STUDY DESIGN: We searched the Cochrane Library and MEDLINE for randomized controlled trials of cervical ripening interventions. Citations were screened in duplicate with discrepancies adjudicated independently. Eligible interventions included vaginal (gel and tablet), oral, and intracervical prostaglandins; amniotomy; vaginal, oral, and buccal/sublingual misoprostol; balloon catheter; and membrane sweeping. Eligible outcomes included vaginal delivery after 24 hours, instrumental delivery, cesarean delivery, uterine hyperstimulation, Apgar score, postpartum hemorrhage, and neonatal intensive care unit admission. A network meta-analysis was conducted in a Bayesian setting, with models for each outcome specified as generalized linear mixed models to account for patient clustering within studies.

RESULTS: 312 articles were eligible. Across the 7 outcomes, the number of interventions with data ranged from 8 to 12, and the number of studies and participants, respectively, ranged from 38 and 7,492 (vaginal delivery > 24 hours) to 257 and 47,287 (cesarean delivery). Using cesarean delivery as an example (network shown in Figure), buccal/sublingual misoprostol and oral misoprostol were among the least likely to result in cesarean delivery while amniotomy and placebo were among the most likely. The favored interventions differed somewhat across outcomes. For example, buccal/sublingual misoprostol was among the most effective interventions for all outcomes except hyperstimulation and balloon catheter was favored for all outcomes except achieving vaginal delivery within 24 hours. Conversely, placebo had high probability of being among the least effective interventions for all outcomes except hyperstimulation.

CONCLUSION: The ranking of optimal cervical ripening interventions based on findings of published trials differs by outcome, but buccal/sublingual misoprostol and balloon catheter were shown to be among the most likely interventions to have favorable outcomes.

(17/494 (3.4%) versus 36/1767 (2.2%); aRR 1.4, 95% CI 0.8-2.4) differed significantly between the two groups.

CONCLUSION: Compared with pushing efforts after vaginal birth of the first twin, internal version followed by total breech extraction of cephalic second twins is associated with shorter inter-twin delivery intervals but not with improved neonatal outcomes.

Table: Neonatal mortality and morbidity of cephalic second twins according to the obstetrical strategy adopted after vaginal birth of the first twin

	Internal version N=494	Pushing efforts N=1767	aRR*[IC95%]
Composite primary outcome	17 (3.4)	36 (2.2)	1.4 [0.8-2.4]
Death			
Intrapartum	0	0	
Neonatal	0	1 (<0.1)	
Apgar score <4 à 5min	1 (0.2)	6 (0.3)	
Neonatal trauma	3 (0.6)	1 (<0.1)	
Long bone fracture	2 (0.4)	1 (<0.1)	
Brachial plexus palsy	1 (0.2)	0	
Skull fracture	0	0	
Spinal cord injury	0	0	
Phrenic or facial nerve injury	0	0	
Subdural hemorrhage	0	0	
Encephalopathy	1 (0.2)	4 (0.5)	
≥2 seizures within 72 h after birth	0	1 (<0.1)	
Endotracheal tube for >24h within 72 h after birth	7 (1.4)	11 (0.6)	
Proven neonatal sepsis	5 (1.0)	15 (0.9)	
Bronchopulmonary dysplasia	1 (0.2)	4 (0.5)	
Intraventricular hemorrhage			
Grade I-II**	2 (0.4)	6 (0.3)	
Grade III-IV	1 (0.2)	0	
Periventricular leukomalacia	0	1 (<0.1)	
Stage 2 and 3 necrotizing enterocolitis	1 (0.2)	1 (<0.1)	

aRR, adjusted Relative Risk; CI confidence interval

*Adjustment for twin delivery per center per year, number by center, gestational age at birth, intrauterine growth restriction, and previous caesarean section

**All variables were included in the primary outcome except grade I-II intraventricular hemorrhage

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387 **Neonatal morbidity of cephalic second twins according to the obstetrical strategy adopted at delivery**

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OBJECTIVE: To assess neonatal mortality and morbidity of cephalic second twins according to the obstetrical strategy adopted after vaginal birth of the first twin, either internal version followed by total breech extraction, as recommended by the French College of Gynecologists and Obstetricians, or pushing efforts.

STUDY DESIGN: In this planned secondary analysis of the JUMODA cohort, a national prospective population-based study of twin deliveries conducted from 02/2014 to 03/2015 in 176 hospitals performing more than 1,500 annual deliveries in France, we included cephalic second twins after vaginal birth of the first twin at 32 weeks and more. Intrauterine fetal deaths, fetal malformations, twin-to-twin transfusion syndromes, monoamniotic pregnancies, and unknown presentations and managements of second twins were excluded. The primary outcome was a composite of neonatal mortality and morbidity. To control for potential confounders, we used multivariate Poisson regression models.

RESULTS: Of 2261 cephalic second twins included in the study, 494 (21.8%) were born in breech presentation after internal version and total breech extraction and 1767 (78.2%) in cephalic presentation after pushing efforts. The mean inter-twin delivery interval was shorter in the internal version group compared to the pushing efforts group (6.6 ± 5.9 versus 10.0 ± 13.0, p<0.01). Neither rates of cesarean for the second twin (10/494 (2.0%) versus 61/1767 (3.2%), p=0.1) nor rates of composite neonatal mortality and morbidity

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388 **The relationship between short inter-pregnancy interval and abnormal placental cord insertion**

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OBJECTIVE: Abnormal placental cord insertion (PCI) includes marginal insertion (cord insertion less than 2 cm from placental edge), and velamentous insertion (cord insertion into the fetal membranes before traversing to the placental edge). The etiology of abnormal