Supplementary Tables: Intrapartum intravenous fluids for caesarean delivery and newborn weight loss: a retrospective cohort study

Table E1. Adjusted Odds Ratios (OR) and 95% Confidence Intervals (CI) for Excess Weight Loss According to Type of Intrapartum IV Fluid Received by Mothers for Caesarean Section in Different Sensitivity Analysis

	24 hours postpartum		48 hours postpartum		72 hours postpartum	
	Model 1 crude OR (95% CI)	*Model 3 Adjusted OR (95% CI)**	*Model 1 crude OR (95% CI)*	*Model 3 Adjusted OR (95% CI)*	*Model 1 crude OR (95% CI)*	*Model 3 Adjusted OR (95% CI)**
Excess Weight Loss (>5%)						
Colloids plus Crystalloids	0.9 (0.5–1.4)	0.9 (0.5–1.5)	1.2 (0.8–1.8)	1.4 (0.9–2.3)	1.4 (0.8–2.3)	1.5 (0.9–2.8)
Crystalloids only	Reference	Reference	Reference	Reference	Reference	Reference
Excess Weight Loss (>10%)						
Colloids plus Crystalloids	0.5 (<0.1–5.2)	0.4 (<0.1–4.7)	1.1 (0.4–3.4)	1.0 (0.3–3.0)	1.1 (0.7–1.8)	0.9 (0.5–1.5)
Crystalloids only	Reference	Reference	Reference	Reference	Reference	Reference
Among Exclusively Breastfed newborns						
Colloids plus Crystalloids	0.6 (<0.1–5.4)	0.5 (<0.1–3.9)	0.5 (0.3–1.0)	0.6 (0.3–1.2)	1.4 (0.7–3.1)	1.6 (0.7–3.9)
Crystalloids only	Reference	Reference	Reference	Reference	Reference	Reference

Model 2 adjusted results were similar to the adjusted results of Model 3 (only results from Model 3 are presented in the table; results of Model 2 are available upon request)

Model 2 adjusted for maternal age, gestational diabetes, hypertension during pregnancy, number of pregnancies, viable births, lost pregnancies, gestational age, pre-eclampsia, cigarette smoking, alcohol use, drug use, epidural before caesarean section, and election to have a caesarean section.

N/A: not applicable

*Firth penalized maximum likelihood estimation method was used for quasi-complete separation

Table E2. Crude and Adjusted Odds Ratios (OR) and 95% Confidence Intervals (CI) for Excess Weight Loss (>5%) According to Doses of Intrapartum IV Fluid Received by Mothers for Caesarean Section

	24 hours postpartum		48 hours postpartum		72 hours postpartum	
	Model 1 (crude)OR (95% CI)*	*Model 3 Adjusted OR (95% CI)**	*Model 1 (crude)OR (95% CI)*	*Model 3 Adjusted OR (95% CI)*	*Model 1 (crude)OR (95% CI)*	*Model 3 Adjusted OR (95% CI)**
Regression models for type-specific doses of IV fluid						
Colloids doses (in ml)						
0	Reference	Reference	Reference	Reference	Reference	Reference
>0-500	0.7 (0.3–1.7)	0.9 (0.3–2.1)	1.1 (0.5–2.4)	1.3 (0.5–2.9)	1.5 (0.6–4.1)	1.4 (0.5–2.9)
>500	0.9 (0.5–1.6)	1.0 (0.5–1.7)	1.1 (0.7–1.9)	1.4 (0.8–2.6)	1.6 (0.9–2.8)	1.6 (0.8–2.1)
Crystalloids doses (in ml)						
0	Reference	Reference	Reference	Reference	Reference	Reference
>0-1000	0.6 (0.2–2.1)	0.7 (0.2–3.2)	1.1 (0.3–4.3)	0.9 (0.2–4.5)	1.1 (0.2–5.5)	0.6 (0.1–3.5)
>1000-2000	0.4 (0.1–1.5)	0.5 (0.1–2.4)	0.9 (0.2–3.2)	0.6 (0.1–3.1)	1.3 (0.3–6.3)	0.6 (0.1–3.2)
>2000	0.6 (0.2–2.2)	0.8 (0.2–3.8)	0.9 (0.2–3.5)	0.8 (0.2–4.3)	1.2 (0.2–6.2)	0.7 (0.1–4.1)
Regression models for total doses of IV fluid						
Total IV fluid doses (in ml)						
>0-1000	Reference	Reference	Reference	Reference	Reference	Reference
>1000-2000	0.7 (0.5–1.2)	0.8 (0.5–1.3)	0.8 (0.5–1.3)	0.7 (0.4–1.2)	1.2 (0.7–1.9)	0.9 (0.5–1.6)
>2000-3000	0.9 (0.5–1.6)	1.1 (0.6–1.9)	0.8 (0.5–1.4)	0.9 (0.5–1.6)	1.2 (0.6–2.1)	1.1 (0.5–2.1)
>3000	2.5 (0.7–8.2)	2.8 (0.7–9.8)	1.1 (0.2–5.1)	1.7 (0.3–10.0)	1.2 (0.2–5.9)	0.9 (0.2–5.6)

Model 2 adjusted results were similar to the adjusted results of Model 3 (only results from Model 3 are presented in the table; results of Model 2 are available upon request)

Model 2 adjusted for maternal age, gestational diabetes, hypertension during pregnancy, number of pregnancies, viable births, lost pregnancies, gestational age, pre-eclampsia, cigarette smoking, alcohol use, drug use, epidural before caesarean section, and election to have a caesarean section.

Model 3 adjusted for maternal age, gestational diabetes, hypertension during pregnancy, number of pregnancies, viable births, lost pregnancies, gestational age, pre-eclampsia, cigarette smoking, alcohol use, drug use, epidural before caesarean section, election to have a caesarean section, Apgar score, breastfeeding, number of stools, number of urine, presence of fever and phototherapy.

N/A: not applicable

*Firth penalized maximum likelihood estimation method was used for quasi-complete separation

Table E3. Crude and Adjusted Odds Ratios (OR) and 95% Confidence Intervals (CI) for Excess Weight Loss (>10%) According to Doses of Intrapartum IV Fluid Received by Mothers for Caesarean Section

	24 hours postpartum		48 hours postpartum		72 hours postpartum	
	*Model 1 (crude)OR (95% CI)**	*Model 3 Adjusted OR (95% CI)**	*Model 1 (crude)OR (95% CI)*	*Model 3 Adjusted OR (95% CI)*	*Model 1 (crude)OR (95% CI)*	*Model 3 Adjusted OR (95% CI)**
Regression models for type-specific doses of IV fluid						
Colloids doses (in ml)						
0	Reference	Reference	Reference	Reference	Reference	Reference
>0-500	1.5 (<0.1–20.6)	0.5 (<0.1–12.4)	0.5 (<0.1–1.7)	0.4 (<0.1–3.3)	0.8 (0.3–2.3)	0.7 (0.2–1.9)
>500	0.6 (<0.1–6.8)	0.7 (<0.1–7.9)	1.7 (0.5–1.4)	1.4 (0.4–4.5)	1.0 (0.6–1.8)	0.8 (0.4–1.5)
Crystalloids doses (in ml)						
0	Reference	Reference	Reference	Reference	Reference	Reference
>0-1000	0.2 (<0.1–44.8)	0.1 (<0.1–27.2)	0.7 (0.1–3.4)	0.7 (<0.1–96.5)	0.3 (0.1–1.3)	**0.2 (<0.1–0.8)**
>1000-2000	0.2 (<0.1–36.4)	0.1 (<0.1–32.1)	1.2 (0.1–3.0)	1.1 (0.1–159.4)	0.4 (0.1–1.4)	**0.2 (<0.1–0.7)**
>2000	0.1 (<0.1–28.5)	0.1 (<0.1–29.6)	0.5 (<0.1–3.8)	0.3 (<0.1–57.9)	0.3 (0.1–1.2)	**0.2 (<0.1–0.8)**
Regression models for total doses of IV fluid						
Total IV fluid doses (in ml)						
>0-1000	Reference	Reference	Reference	Reference	Reference	Reference
>1000-2000	0.7 (0.1–8.1)	0.9 (0.1–15.9)	2.7 (0.8–13.5)	2.6 (0.8–12.8)	0.9 (0.6–1.6)	0.7 (0.4–1.3)
>2000-3000	0.4 (<0.1–8.2)	0.7 (<0.1–22.5)	0.8 (0.1–5.9)	0.6 (0.1–4.9)	0.9 (0.4–1.7)	0.8 (0.4–1.6)
>3000	5.2 (<0.1–103.4)	3.2 (<0.1–151.2)	3.2 (<0.1–41.9)	4.3 (<0.1–60.6)	0.2 (<0.1–1.7)	0.2 (<0.1–1.6)

Model 2 adjusted results were similar to the adjusted results of Model 3 (only results from Model 3 are presented in the table; results of Model 2 are available upon request)

Model 2 adjusted for maternal age, gestational diabetes, hypertension during pregnancy, number of pregnancies, viable births, lost pregnancies, gestational age, pre-eclampsia, cigarette smoking, alcohol use, drug use, epidural before caesarean section, and election to have a caesarean section.
Model 3 adjusted for maternal age, gestational diabetes, hypertension during pregnancy, number of pregnancies, viable births, lost pregnancies, gestational age, pre-eclampsia, cigarette smoking, alcohol use, drug use, epidural before caesarean section, election to have a caesarean section, Apgar score, breastfeeding, number of stools, number of urine, presence of fever and phototherapy.
N/A: not applicable
*Firth penalized maximum likelihood estimation method was used for quasi-complete separation

Table E4. Crude and Adjusted Odds Ratios (OR) and 95% Confidence Intervals (CI) for Excess Weight Loss (>7%) According to Doses of Intrapartum IV Fluid Received by Mothers for Caesarean Section among Exclusively Breastfed Newborns

	24 hours postpartum		48 hours postpartum		72 hours postpartum	
	Model 1 (crude)OR (95% CI)*	*Model 3 Adjusted OR (95% CI)**	*Model 1 (crude)OR (95% CI)*	*Model 3 Adjusted OR (95% CI)*	*Model 1 (crude)OR (95% CI)*	*Model 3 Adjusted OR (95% CI)**
Regression models for type-specific doses of IV fluid						
Colloids doses (in ml)						
0	Reference	Reference	Reference	Reference	Reference	Reference
>0-500	2.3 (<0.1–35.3)	2.0 (<0.1–38.2)	0.8 (0.2–2.8)	1.2 (0.3–4.6)	1.1 (0.3–4.7)	NA[§]
>500	1.0 (<0.1–9.8)	0.6 (<0.1–5.9)	0.5 (0.2–1.1)	0.6 (0.3–1.3)	1.7 (0.8–4.3)	NA[§]
Crystalloids doses (in ml)						
0	Reference	Reference	Reference	Reference	Reference	Reference
>0-1000	0.3 (<0.1–89.5)	0.2 (<0.1–76.9)	1.8 (0.3–21.5)	1.9 (0.2–25.6)	1.8 (0.1–16.2)	NA[§]
>1000-2000	0.4 (<0.1–90.8)	0.3 (<0.1–89.4)	1.8 (0.3–20.4)	1.4 (0.2–18.5)	1.2 (0.1–10.3)	NA[§]
>2000	0.2 (<0.1–56.6)	0.1 (<0.1–48.8)	2.1 (0.3–24.7)	1.9 (0.2–25.7)	1.4 (0.1–12.9)	NA[§]
Regression models for total doses of IV fluid						
Total IV fluid doses (in ml)						
>0-1000	Reference	Reference	Reference	Reference	Reference	Reference
>1000-2000	1.1 (0.2–11.5)	1.2 (0.2–10.8)	0.9 (0.5–1.5)	0.7 (0.4–1.3)	0.7 (0.4–1.4)	0.7 (0.3–1.4)
>2000-3000	0.5 (<0.1–9.7)	0.5 (<0.1–6.4)	1.2 (0.6–2.4)	1.1 (0.5–2.3)	0.9 (0.4–2.1)	0.8 (0.3–1.9)
>3000	4.9 (<0.1–105.0)	1.8 (<0.1–70.0)	0.4 (<0.1–2.1)	0.3 (<0.1–1.8)	1.5 (0.3–15.9)	0.8 (0.1–9.2)

Model 2 adjusted results were similar to the adjusted results of Model 3 (only results from Model 3 are presented in the table; results of Model 2 are available upon request)

Model 2 adjusted for maternal age, gestational diabetes, hypertension during pregnancy, number of pregnancies, viable births, lost pregnancies, gestational age, pre-eclampsia, cigarette smoking, alcohol use, drug use, epidural before caesarean section, and election to have a caesarean section.

Model 3 adjusted for maternal age, gestational diabetes, hypertension during pregnancy, number of pregnancies, viable births, lost pregnancies, gestational age, pre-eclampsia, cigarette smoking, alcohol use, drug use, epidural before caesarean section, election to have a caesarean section, Apgar score, number of stools, number of urine, presence of fever and phototherapy.

N/A: not applicable

*Firth penalized maximum likelihood estimation method was used for quasi-complete separation

§ Models did not converge efficiently due to quasi-complete separation (i.e. impossible to estimate even with penalized maximum likelihood)

Table E5. Beta Coefficients and 95% Confidence Intervals of the Linear Regression Models for Difference in Weight at 24, 48, and 72 Hours Postpartum According to Maternal Intrapartum Colloids and Crystalloids Exposure among Exclusively Breastfed Newborns Only

	Difference in weight in grams (β and 95% CI)					
	24 hours postpartum		**48 hours postpartum**		**72 hours postpartum**	
	Model 1 (crude)	*Model 3*	*Model 1 (crude)*	*Model 3*	*Model 1 (crude)*	*Model 3*
Colloids plus Crystalloids	18.6 (-2.7, 39.8)	17.3 (-4.1, 38.7)	23.3 (-2.5, 49.0)	18.8 (-7.1, 44.7)	3.6 (-26.8, 34.0)	-2.5 (-33.9, 29.0)
Crystalloids only	Reference	Reference	Reference	Reference	Reference	Reference
Colloids doses in ml (*vs* 0)						
>0-500	29.4 (-15.1, 73.8)	23.3 (-21.3, 70.7)	18.3 (-35.9, 72.7)	20.8 (-33.3, 75.3)	-2.1 (-37.5, 32.4)	-17.1 (-87.8, 53.6)
>500	16.7 (-8.4, 41.7)	16.8 (-8.1, 41.5)	22.3 (-7.8, 52.1)	15.5 (-14.8, 45.1)	-4.6 (-60.2, 69.8)	-0.6 (-35.5, 36.7)
Crystalloids doses in ml (*vs* 0)						
>0-1000	34.3 (-52.3, 80.6)	20.6 (-52.9, 94.7)	-31.7 (-113.3, 53.3)	-18.9 (-107.3, 71.1)	-17.7 (-125.6, 90.5)	-3.8 (-131.6, 125.1)
>1000-2000	33.0 (-51.1, 81.6)	18.5 (-54.4, 91.4)	-20.5 (-101.2, 57.2)	-8.9 (-96.8, 79.6)	-4.6 (-101.1, 111.9)	20.5 (-105.1, 147.1)
>2000	-34.0 (-57.1, 78.8)	15.8 (-58.0, 89.4)	-27.8 (-110.9, 52.6)	-9.9 (-99.4, 80.0)	-13.6 (-122.2, 95.9)	13.2 (-115.5, 141.9)
Total IV fluid doses in ml: (*vs* >0-1000)						
>1000-2000	-1.5 (-18.6, 16.6)	-1.9 (-19.0, 15.2)	10.3 (-10.5, 31.1)	9.1 (-11.1, 30.3)	17.4 (-10.7, 44.0)	15.5 (-12.2, 42.3)
>2000-3000	-8.6 (-14.9, 31.7)	6.7 (-15.8, 29.3)	10.8 (-17.1, 38.7)	13.3 (-14.2, 40.6)	1.8 (-33.6, 36.9)	9.1 (-25.9, 45.6)
>3000	**-64.9 (-125.6, -4.5)**	-48.3 (-107.9, 11.2)	-15.4 (-89.9, 59.7)	-6.9 (-79.4, 65.2)	-22.9 (-104.1, 59.3)	13.6 (-67.0, 95.8)

The regression coefficient represents the estimated difference in weight since birth

Model 2 adjusted results were similar to the adjusted results of Model 3 (only results from Model 3 are presented in the table; results of Model 2 are available upon request)

Model 2 adjusted for maternal age, gestational diabetes, hypertension during pregnancy, number of pregnancies, viable births, lost pregnancies, gestational age, pre-eclampsia, cigarette smoking, alcohol use, drug use, epidural before caesarean section, and election to have a caesarean section.

Model 3 adjusted for maternal age, gestational diabetes, hypertension during pregnancy, number of pregnancies, viable births, lost pregnancies, gestational age, pre-eclampsia, cigarette smoking, alcohol use, drug use, epidural before caesarean section, election to have a caesarean section, Apgar score, number of stools, number of urine, presence of fever and phototherapy.