

Supplementary Online Content

Foglia EE, te Pas AB, Kirpalani H, et al. Sustained inflation vs standard resuscitation for preterm infants: a systematic review and meta-analysis.

JAMA Pediatr. Published online February 3, 2020.

doi:10.1001/jamapediatrics.2019.5897

eFigure 1. Flow Diagram

eFigure 2. Fixed Effects Meta-Analysis of Relative Risk for Death During Hospitalization

eFigure 3. Fixed Effects Meta-Analysis of Death During Hospitalization by Post Hoc Gestational Age Subgroups

eFigure 4. Fixed Effects Meta-Analysis for Death in the First 2 Days by Gestational Age Subgroups

eFigure 5. Fixed Effects Cumulative Meta-Analysis for Death in the First 2 Days

eFigure 6. Fixed Effects Meta-Analysis for Death in the Delivery Room by Gestational Age Subgroups

eFigure 7. Subgroup Analysis of All Secondary Outcomes Based on Study Design Subgroups

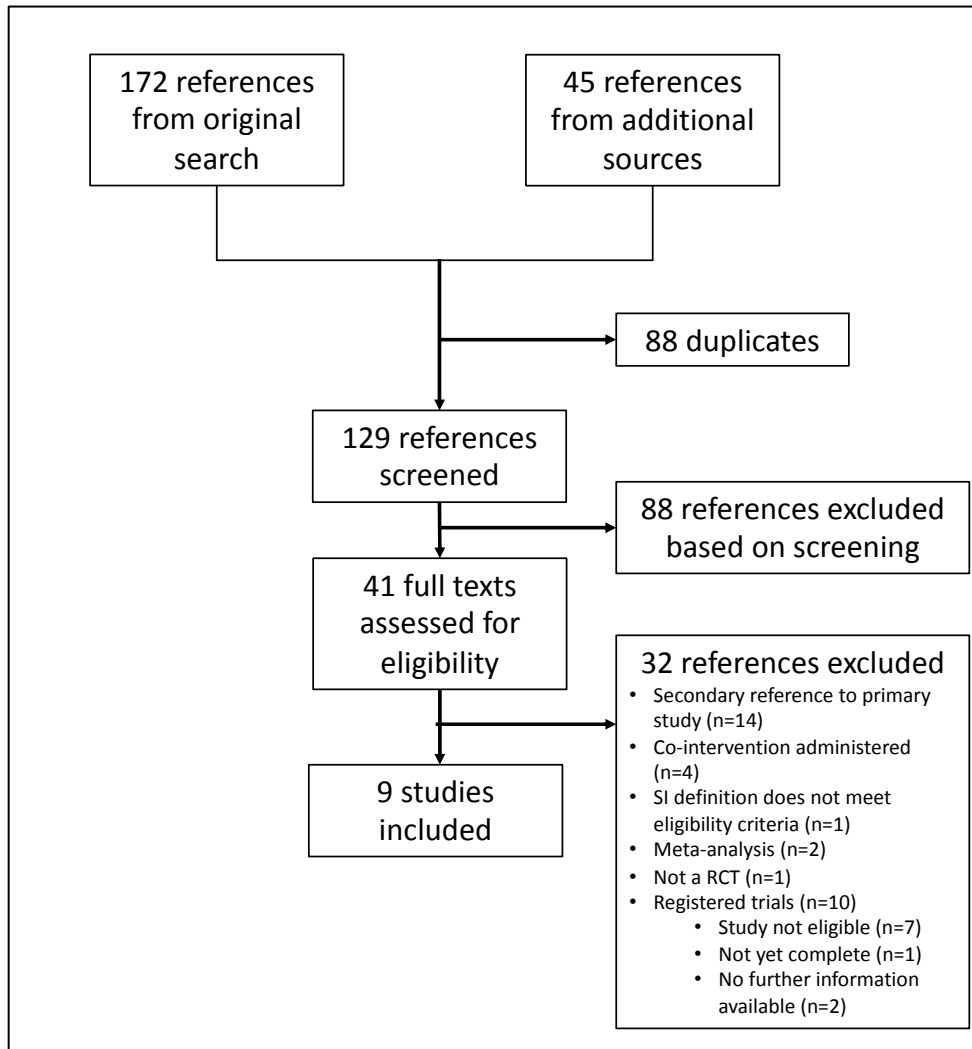
eTable 1. Assessment of Risk of Bias for Included Trials

eTable 2. GRADE Quality of Evidence Assessment for Primary and Prespecified Secondary Outcomes

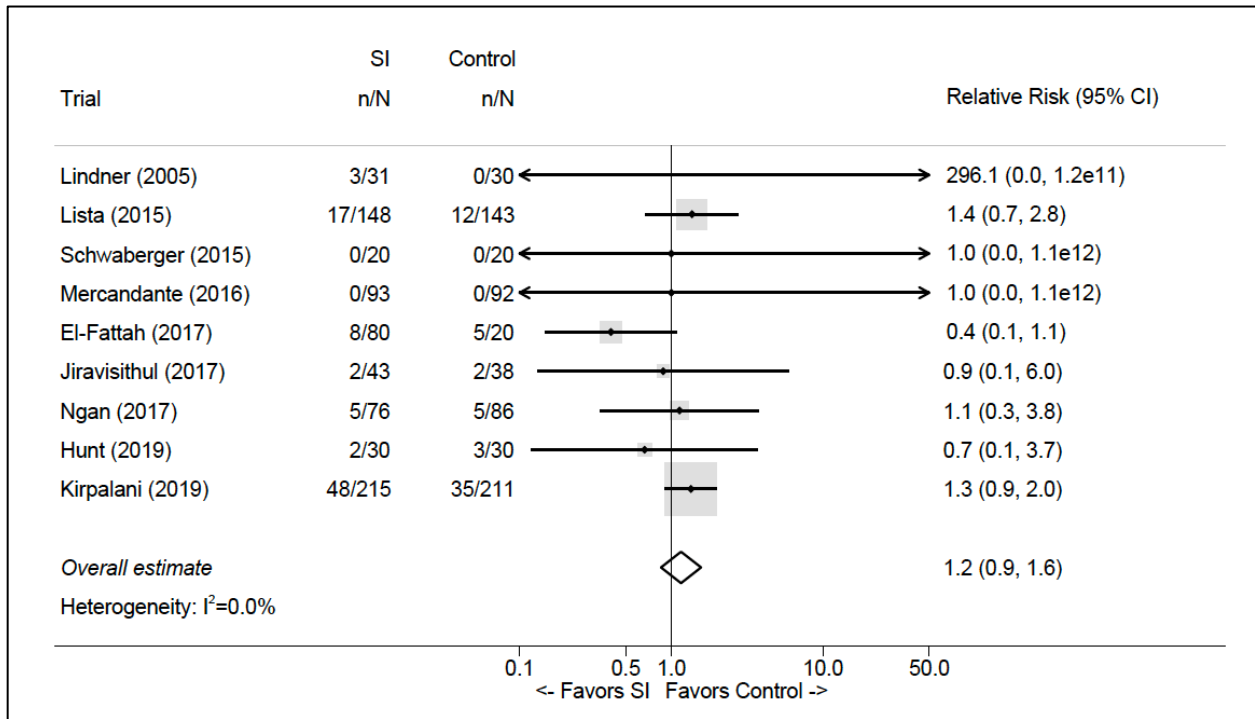
eTable 3. Results From Fixed Effects and Random Effects Models for Risk Difference and Relative Risk for All Outcomes Reported in the GRADE Assessment of Quality of Evidence

This supplementary material has been provided by the authors to give readers additional information about their work.

eFigure 1. Flow Diagram



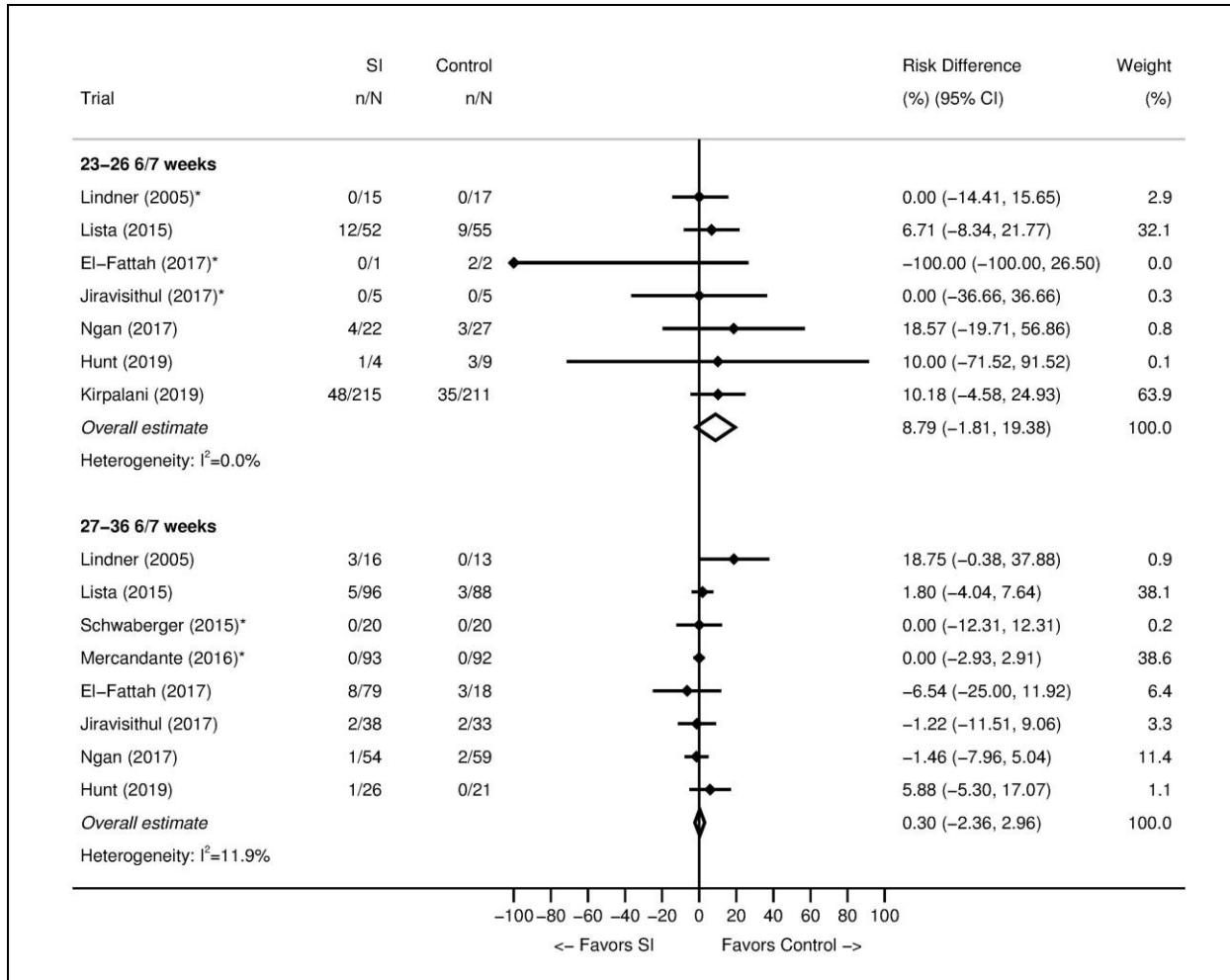
eFigure 2. Fixed Effects Meta-Analysis of Relative Risk for Death During Hospitalization



Study weights are indicated via the gray boxes.

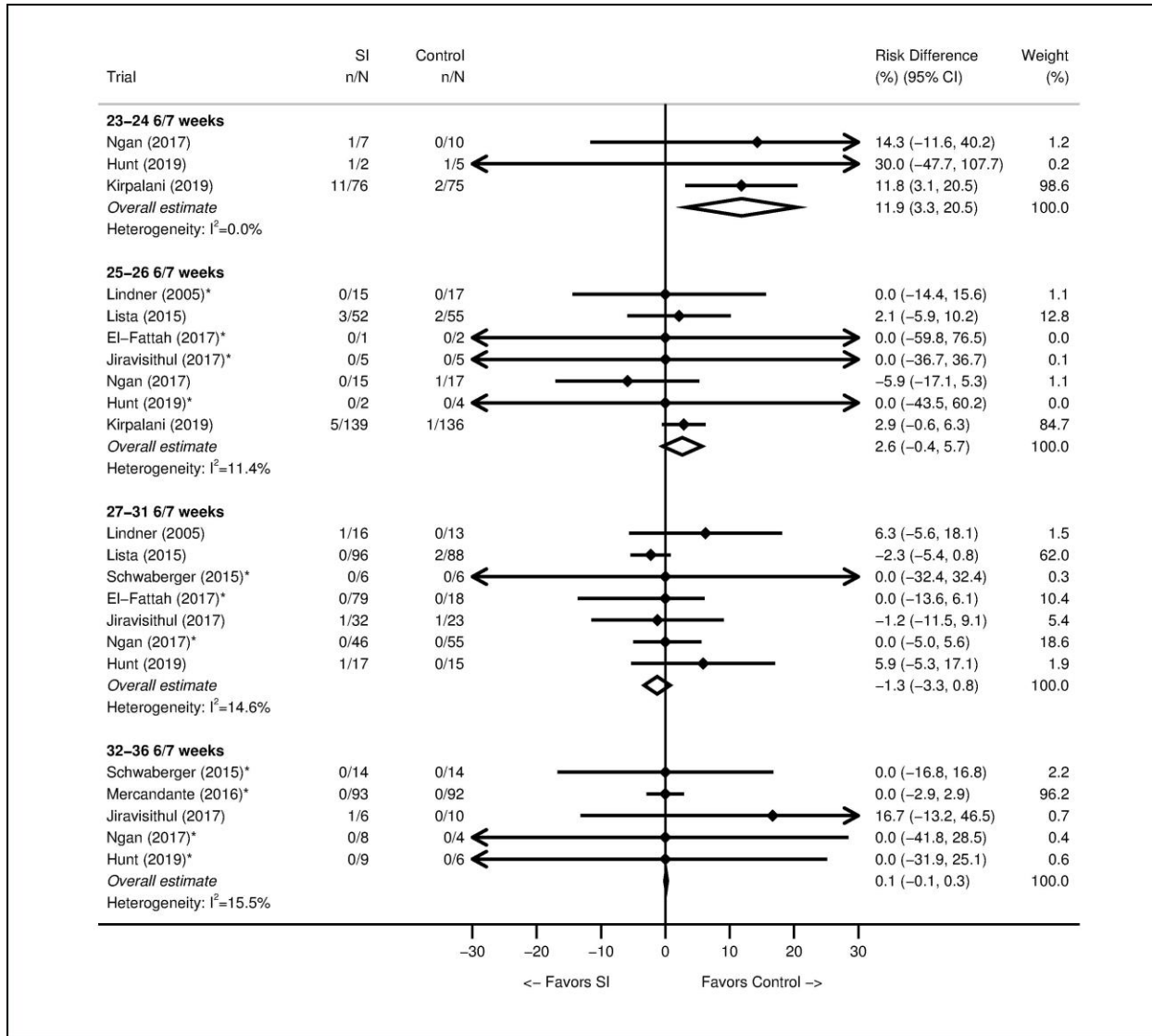
The Sweeting correction was applied to relative risk estimates for studies with zero events in any arm.

eFigure 3. Fixed Effects Meta-Analysis of Death During Hospitalization by Post Hoc Gestational Age Subgroups



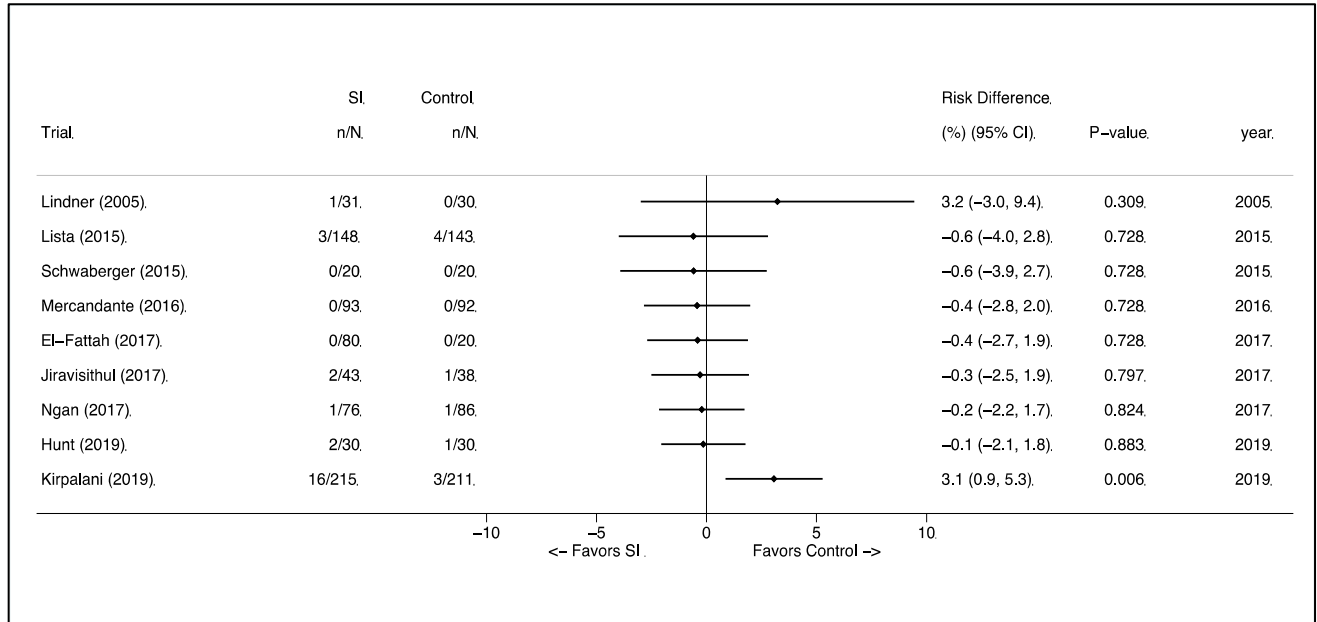
*Exact confidence intervals shown

eFigure 4. Fixed Effects Meta-Analysis for Death in the First 2 Days by Gestational Age Subgroups

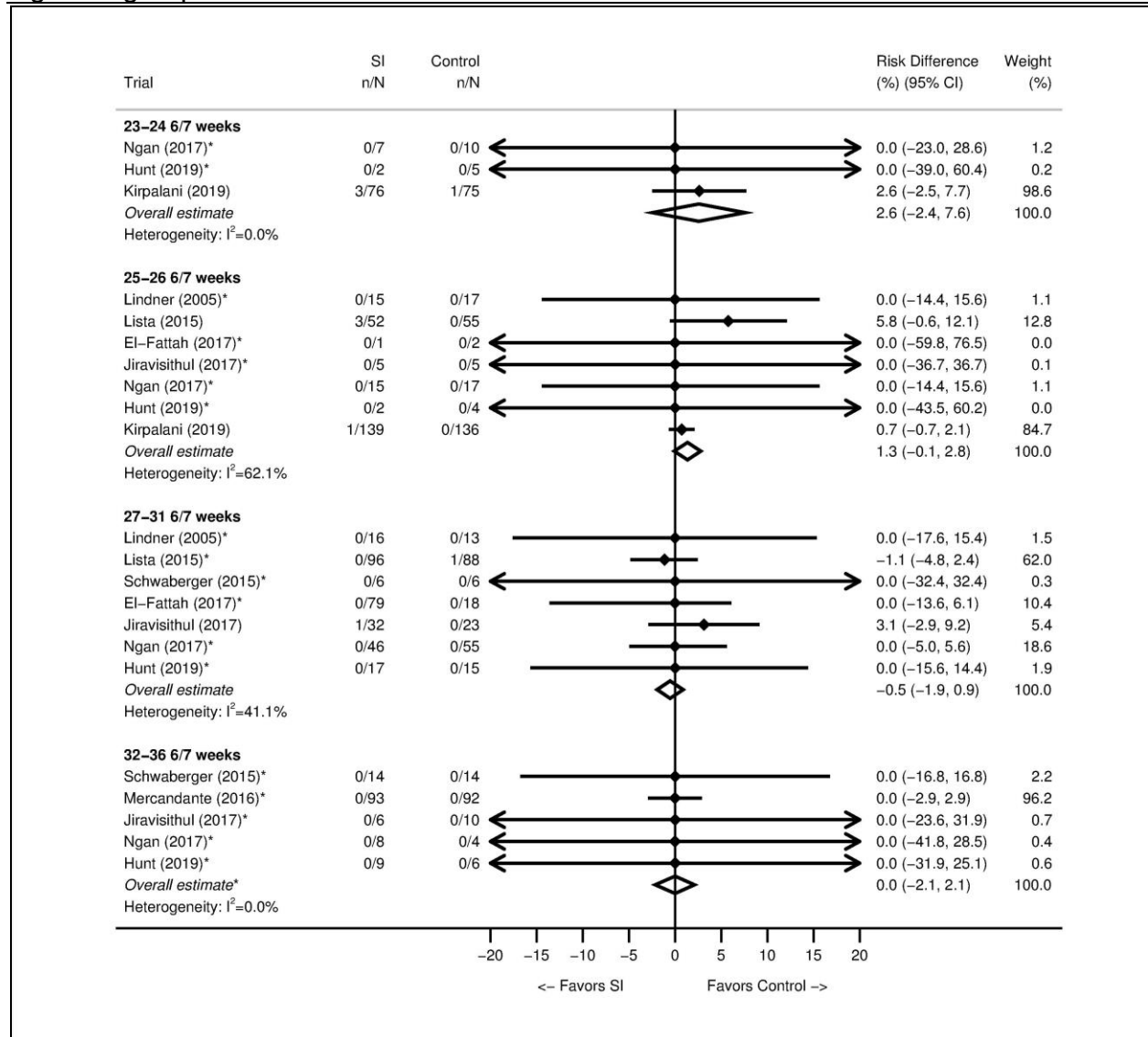


*Exact confidence intervals shown

eFigure 5. Fixed Effects Cumulative Meta-Analysis for Death in the First 2 Days

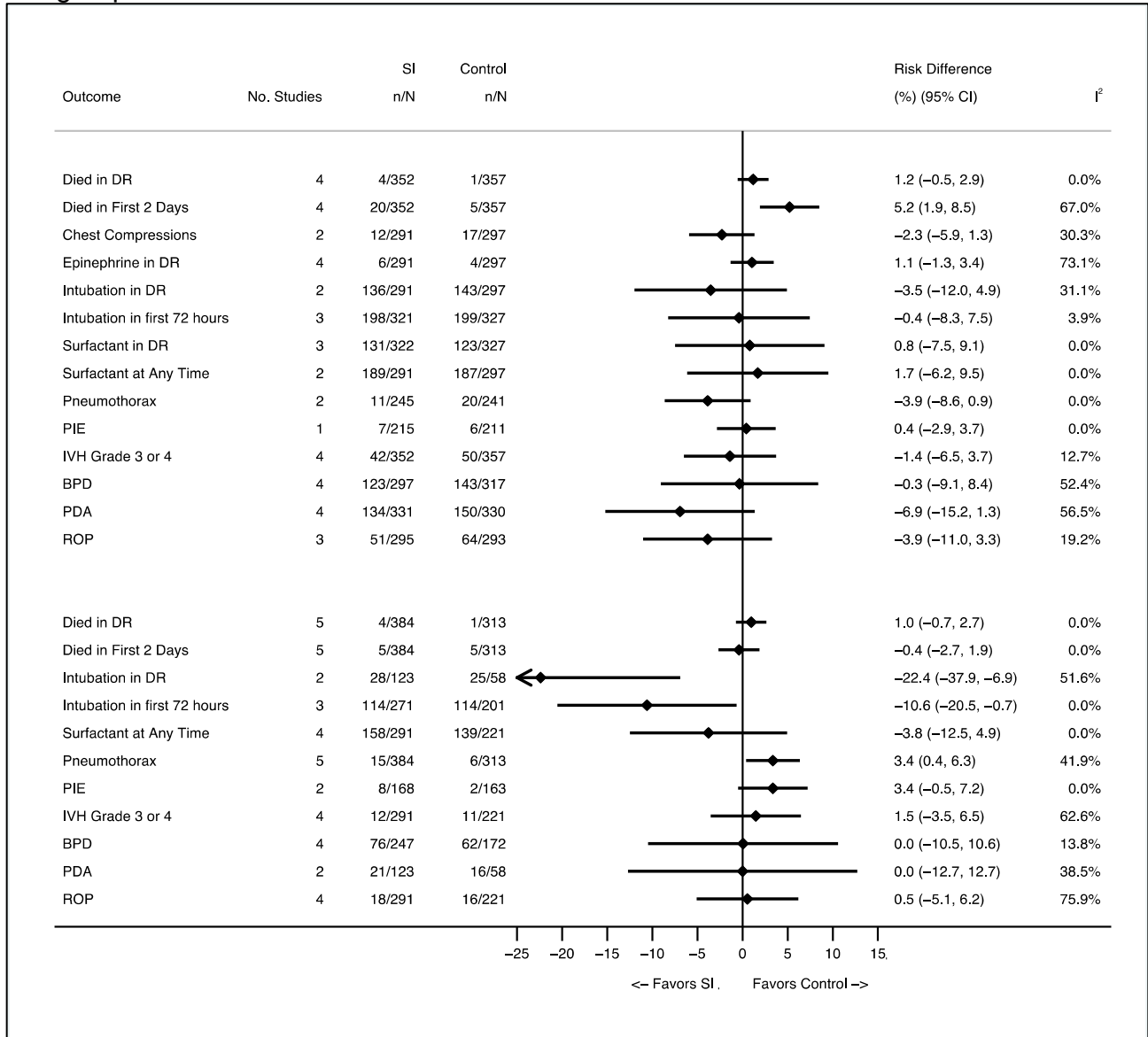


eFigure 6. Fixed Effects Meta-Analysis for Death in the Delivery Room by Gestational Age Subgroups



*Exact confidence intervals shown

eFigure 7. Subgroup Analysis of All Secondary Outcomes Based on Study Design Subgroups



Chest compression and epinephrine data not reported for prophylactic studies.

Abbreviations: BPD: bronchopulmonary dysplasia, DR: delivery room, IVH: intraventricular hemorrhage, PDA: patent ductus arteriosus, PDA: patent ductus arteriosus, PIE: pulmonary interstitial emphysema, ROP: retinopathy of prematurity.

eTable 1. Assessment of Risk of Bias for Included Trials

Study	Sequence generation	Allocation concealment	Blinding of caregivers	Incomplete outcome data	Selective reporting	Other risk of bias
Lindner 2005	Unclear risk	Low risk	High risk	Low risk	Low risk	Unclear: Study closed early for poor recruitment after first interim analysis
Lista 2015	Unclear risk	Low risk	High risk	Low risk	Low risk	N/A
Jiravisitkul 2017	Low risk	Low risk	High risk	Unclear risk	Low risk	Unclear: Control group (n=38) did not reach targeted sample size (n=40), although study reached overall enrollment target
Schwabegger 2015	Low risk	Low risk	High risk	Low risk	Low risk	N/A
Mercadante 2016	Unclear risk	Low risk	High risk	Low risk	Low risk	N/A
Abd El-Fattah 2017	Low risk	Low risk	High risk	Low risk	Low risk	N/A
Ngan 2017	Low risk	High risk	High risk	High risk	Low risk	Unclear: Sample size calculated for event rate that far exceeded observed event rate in control group
Hunt 2019	Low risk	High risk	High risk	Low risk	Low risk	N/A
Kirpalani 2019	Low risk	Low risk	High risk	Low risk	Low risk	Unclear: Trial closed early for increased death in first 48 hours in SI group

Abbreviations: N/A: not applicable, SI: sustained inflation

eTable 2. GRADE Quality of Evidence Assessment for Primary and Prespecified Secondary Outcomes

Outcome	Quality Assessment						No of patients		Effect		Quality	Importance ⁴
	No of Studies	Study Design	Risk of Bias ¹	Inconsistency ²	Indirectness	Imprecision ³	SI	Control	Relative	Absolute		
Death during hospitalization	9	RCTs	Serious	Not Serious	Not serious	Serious	85/736 (11.5%)	62/670 (9.3%)	1.16 (from 0.86 to 1.57)	4 more per 100 (from 1 fewer to 8 more)	Low	Critical
Chest compressions in the DR	2	RCTs	Serious	Not serious	Not serious	Serious	12/291 (4.1%)	17/297 (5.7%)	0.73 (from 0.35 to 1.49)	2 fewer per 100 (from 6 fewer to 1 more)	Low	Important
Epinephrine in the DR	2	RCTs	Serious	Not serious	Not serious	Serious	6/291 (2.1%)	4/297 (1.3%)	1.50 (from 0.42 to 5.31)	1 more per 100 (from 1 fewer to 3 more)	Low	Important
Intubation in first 72 hours	6	RCTs	Serious	Serious	Not serious	Serious	312/592 (52.7%)	313/528 (59.2%)	0.94 (from 0.85 to 1.03)	4 fewer per 100 (from 10 fewer to 3 more)	Low	Important
Pneumothorax	7	RCTs	Serious	Not serious	Not serious	Serious	26/629 (4.1%)	26/554 (4.7%)	0.89 (from 0.53 to 1.50)	1 fewer per 100 (from 4 fewer to 2 more)	Low	Important
Grade 3 or 4 IVH	8	RCTs	Serious	Not serious	Not serious	Serious	54/643 (8.4%)	61/578 (10.6%)	0.90 (from 0.65 to 1.26)	1 fewer per 100 (from 4 fewer to 3 more)	Low	Critical
BPD	8	RCTs	Serious	Not serious	Not serious	Serious	199/544 (36.6%)	205/489 (41.9%)	0.92 (from 0.80 to 1.07)	0 per 100 (from 7 fewer to 7 more)	Low	Critical

¹Blinding of intervention not possible

²Inconsistency evaluated based on measures of relative (not absolute) treatment effects. I² values <40% for all outcomes

³All studies include <2,000 participants

⁴Importance consistent with rating by International Liaison Committee on Resuscitation where possible

Abbreviations: BPD: bronchopulmonary dysplasia, DR: delivery room, IVH: intraventricular hemorrhage, RCTs: randomized controlled trials

eTable 3. Results From Fixed Effects and Random Effects Models for Risk Difference and Relative Risk for All Outcomes Reported in the GRADE Assessment of Quality of Evidence

Outcome	# studies	Fixed Effects RD (%) (95% CI)	I ²	Random Effects RD (%) (95% CI)	I ²	Fixed Effects RR (95% CI)	I ²	Random Effects RR (95% CI)	I ²
Death in hospital	9	3.6 (-0.7, 7.9)	16.5	1.0 (-1.5, 2.7)	0.0	1.2 (0.9,1.6)	0.0	1.2 (0.8, 1.7)	0.0
Chest compressions in DR	2	-2.3 (-5.9, 1.3)	30.3	-1.4 (-29.7, 26.9)	25.3	0.7 (0.4, 1.5)	34.5	0.8 (0.0, 345.5)	34.4
Epinephrine in DR	2	1.1 (-1.3, 3.4)	73.1	0.0 (-16.0, 16.0)	48.9	1.5 (0.4, 5.3)	0.0	1.9 (0.0, 1.4e+04)	0.0
Intubation in first 72 hours	6	-3.6 (-9.8, 2.6)	0.0	-3.8 (-11.0, 3.4)	0.0	0.9 (0.8, 1.0)	0.0	0.9 (0.8, 1.1)	0.0
Pneumothorax	7	-0.8 (-3.9, 2.2)	60.1	-0.4 (-4.5, 3.8)	53.7	0.9 (0.5, 1.5)	24.2	0.8 (0.3, 2.6)	20.1
IVH Grade 3/4	8	-0.5 (-4.3, 3.3)	6.1	0.0 (-1.2,1.1)	0.0	0.9 (0.6, 1.3)	0.0	0.9 (0.6, 1.4)	0.0
BPD	8	-0.2 (-7.2, 6.8)	27.6	-4.1 (-10.2,2.0)	4.7	0.9 (0.8, 1.1)	13.5	0.9 (0.8, 1.1)	11.0

Abbreviations: BPD: bronchopulmonary dysplasia, CI: confidence interval, CPR: cardiopulmonary resuscitation, DR: delivery room, IVH: intraventricular hemorrhage, RCTs: randomized controlled trials, RD: risk difference, RR: relative risk