



INGESTA DE LÍQUIDOS EN ANALGESIA DE TRABAJO DE PARTO

DANTE SEGURA PINEDO
Médico Anestesiólogo INMP

INGESTA ORAL EN TRABAJO DE PARTO

- ¿Cuál es el verdadero problema?



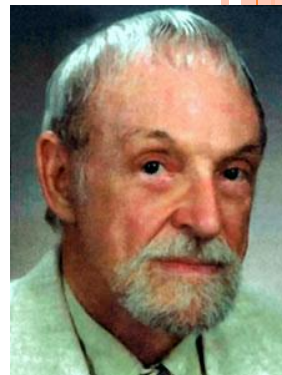
This Week's Citation Classic

CC/NUMBER 27
JULY 4, 1983

Mendelson C L. The aspiration of stomach contents into the lungs during obstetric anesthesia. *Amer. J. Obstet. Gynecol.* 52:191-205, 1946.
[Dept. Obstetrics and Gynecology, Cornell Univ. Medical Coll., and New York Hosp., NY]

- Curtis Mendelson.
- Publicación consta de 2 segmentos
 - Experimental (conejos)
 - Casos auditables:
 - 44,016 partos entre 1932 y 1945
 - 66 casos de Broncoaspiración (0,15%)
 - En 45 casos se pudo registrar el material aspirado:
 - Líquido: 40 casos (no muertes)
 - Sólido: 5 casos (2 muertes secundarios a Sofocación)

Amer. J. Obstet. Gynecol. 52:191-205, 1946.



A RAÍZ DE ESTA PUBLICACIÓN...

- Se recomienda medidas profilácticas ante el Síndrome de Mendelson:
 - NPO durante el trabajo de parto,
 - Aumento de uso de Anestesia Regional.
 - Administración de Antiácidos.
 - Estomago vacío previa a la administración de AG.
 - Administración competente por un personal entrenado.



LA PREGUNTA LÓGICA SERÍA:

- ¿Seguimos practicando la misma anestesia que hace 70 años?
- ¿La morbilidad y mortalidad materna secundaria a aspiración de contenido gástrico es tan elevada?
- ¿El entendimiento de la fisiología materna ha mejorado?



Saving Lives, Improving Mothers' Care

**Lessons learned to inform future maternity care
from the UK and Ireland Confidential Enquiries into
Maternal Deaths and Morbidity 2009-2012**



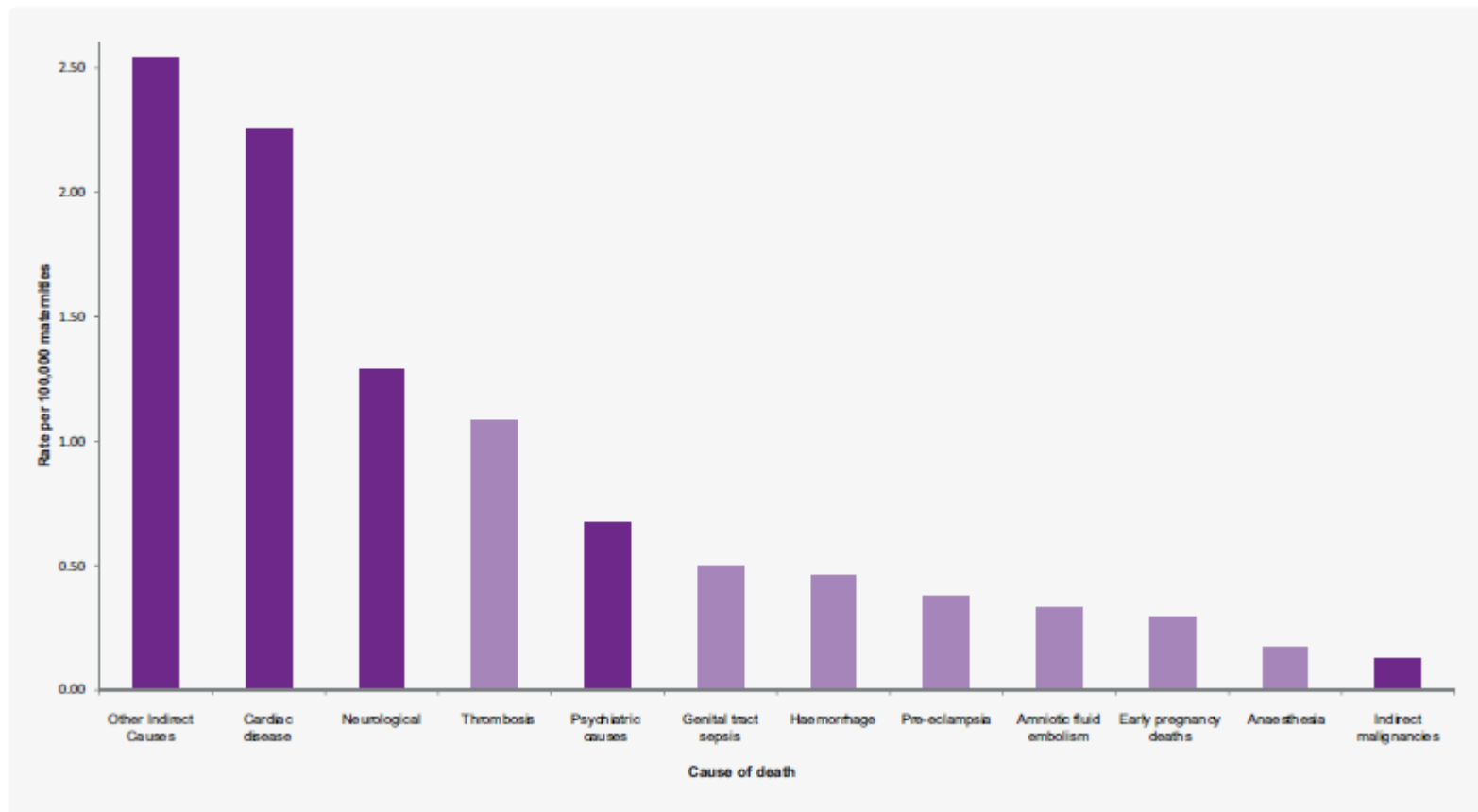
December 2014



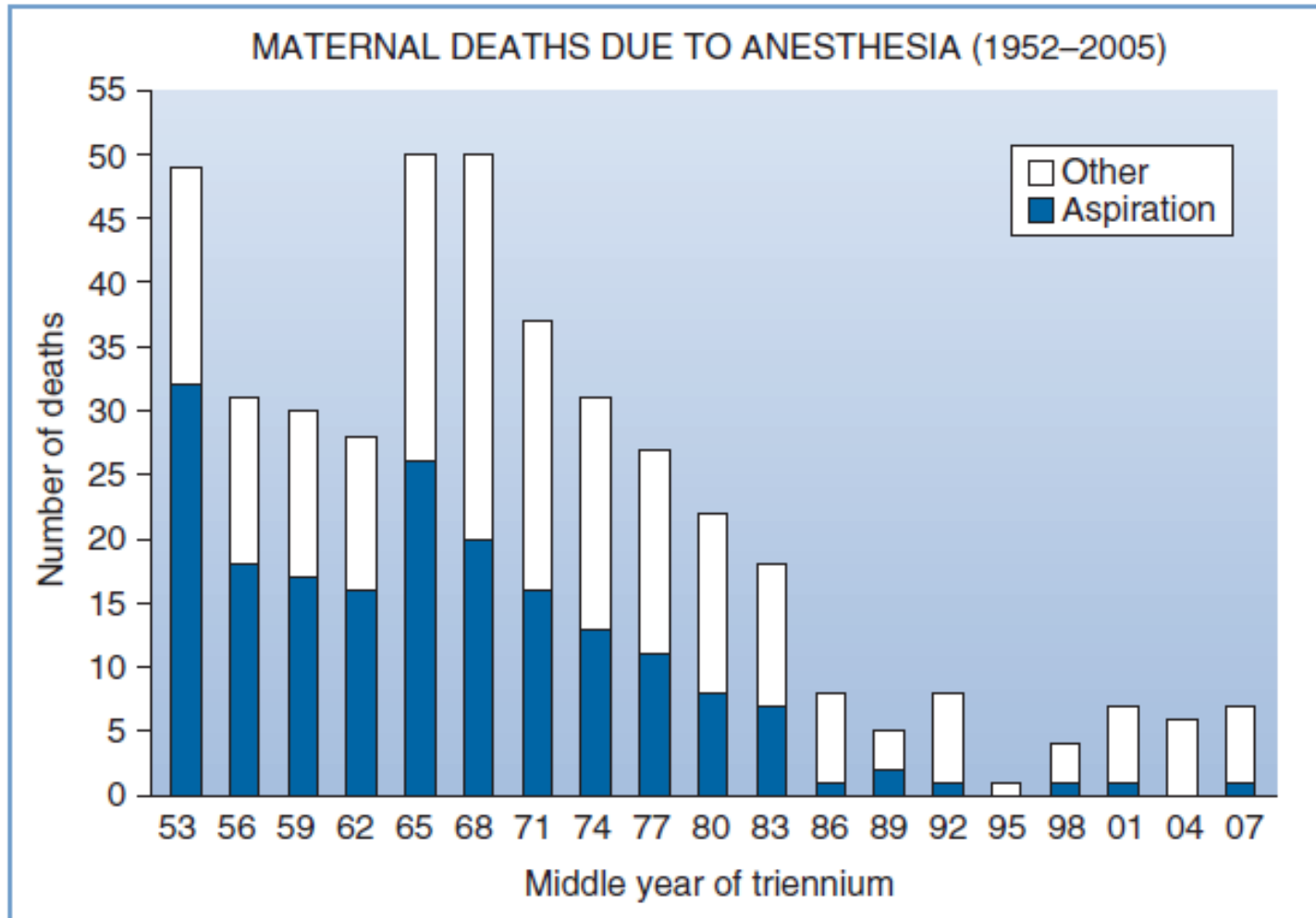
Maternal deaths have decreased

from **11** 2006-08 to **10** 2010-12 per 100,000 women giving birth

Figure 2.6: Maternal mortality by cause 2010–12



MUERTES MATERNAS RELACIONADAS A ANESTESIA



Chestnut's Obstetric Anesthesia Fifth Edition

Serious Complications Related to Obstetric Anesthesia

The Serious Complication Repository Project of the Society for Obstetric Anesthesia and Perinatology

Robert D'Angelo, M.D., Richard M. Smiley, M.D., Ph.D., Edward T. Riley, M.D.,
Scott Segal, M.D., M.H.C.M.



This article has been selected for the ANESTHESIOLOGY CME Program. Learning objectives and disclosure and ordering information can be found in the CME section at the front of this issue.

What We Already Know about This Topic

- The incidences of serious complications related to obstetric anesthesia are unknown

What This Article Tells Us That Is New

- The Serious Complication Repository Project of the Society for Obstetric Anesthesia and Perinatology captured data on approximately 257,000 parturients administered neuraxial or general anesthesia at 30 institutions between 2004 and 2009
- Serious anesthesia-related complications were reported for 85 (1 of 3,000) patients
- The most common serious complications were high neuraxial block, respiratory arrest in labor suite, and unrecognized spinal catheter



Table 4. Incidence of Serious Complications*

Serious Complication	Totals	Incidence	95% CI	Anesthesia Related	Incidence	95% CI
Maternal death	30	1:10,250	1:7,180, 1:15,192	0		
Cardiac arrest	43†	1:7,151	1:5,319, 1:9,615	2	1:128,398	1:35,544, 1:1,060,218
Myocardial infarction	2	1:153,748	1:42,562, 1:1,269,541	2	1:128,398	1:35,544, 1:1,060,218
Epidural abscess/meningitis	4			4	1:62,866	1:25,074, 1:235,620
Epidural hematoma	1			1	1:251,463	1:46,090, 1:10,142,861
Serious neurologic injury	27	1:11,389	1:7,828, 1:17,281	7	1:35,923	1:17,805, 1:91,244
Aspiration	0			0		
Failed intubation	10			10	1:533	1:290, 1:971
High neuraxial block	58			58‡	1:4,336	1:3,356, 1:5,587
Anaphylaxis	5§	1:61,499	1:26,353, 1:189,403	0		
Respiratory arrest in labor suite	25	1:8,455	1:5,714, 1:12,500	16	1:10,042	1:6,172, 1:16,131
Unrecognized spinal catheter	14			14	1:15,435	1:9,176, 1:25,634
Total	157	1:1,959	1:1,675, 1:2,294	85#	1:3,021	1:2,443, 1:3,782

* The incidence and 95% CI are listed only once when solely related to anesthesia. † Fourteen cardiac arrests did not result in maternal death. ‡ Also includes high blocks on labor and delivery that resulted in respiratory arrests from local anesthetic administration. § The medications associated with anaphylaxis were administered by anesthesia personnel but were not anesthesia medications. || There were 157 total serious complications; however, some complications are listed in more than one category. # There were 85 anesthesia-related serious complications; however, some complications are listed in more than one category.



LAS POLÍTICAS DE NPO EN TP DEBERÍAN SER TAN ESTRUCTAS?

- Cubos de hielo o sorbos de agua?
- Agua a libre demanda?
- Líquidos claros? (bebidas deportivas)
- Comida ligera?
- Lo que demande la paciente?



FISIOLOGÍA GASTROINTESTINAL EN LA GESTANTE

- EEI
 - Incompentente
- Secreción Gástrica:
 - Prácticamente sin cambios
- Vaciamiento Gástrico:
 - Gestantes sin TP: Sin cambios
 - Gestantes en TP: Disminuye de forma variable
 - Gestantes en TP + Opiodes IM o EV: Disminuye marcadamente
 - Gestantes en TP + Opiode Neuroaxial: Dosis Dependiente.

VACIAMIENTO GÁSTRICO

TABLE 29-1 Studies of Gastric Emptying during Pregnancy and Labor

Method of Assessment	Study*	Study Period and Subjects	Gastric Emptying
Radiographic	Hirsheimer et al. (1938) ⁴³	Labor (10 subjects)	Delay in 2 subjects
	La Salvia et al. (1950) ⁴⁶	Third trimester and labor	Third trimester: no delay Third trimester + opioids: marked delay Labor: slight delay Labor + opioids: marked delay Delay in 1 subject
Large-volume test meal	Crawford (1956) ³⁸	Labor (12 subjects)	No change
	Hunt & Murray (1958) ⁴⁴	Serial study Small numbers Second and third trimesters, postpartum	No change
Double-sampling test meal	Davison et al. (1970) ³⁹	Third trimester and labor	Labor: delay, with altered pattern of emptying
Epigastric impedance	O'Sullivan et al. (1987) ⁵⁰	Nonpregnant controls, third trimester, 60 minutes postpartum	No delay
Applied potential tomography	Sandhar et al. (1992) ⁵²	Sequential study 10 mothers: 37-40 weeks' gestation, 2-3 days postpartum, 6 weeks postpartum	No delay
Acetaminophen absorption	Nimmo et al. (1975) ⁴⁹	Labor with intramuscular opioids Postpartum 2-5 days	Labor: No delay Labor + opioids: marked delay Postpartum: no delay
	Nimmo et al. (1977) ⁶⁰	Labor	Labor: slight delay Labor + epidural analgesia (no opioid): slight delay
	Simpson et al. (1988) ⁵³	Nonpregnant controls, 8-11 weeks' gestation, 12-14 weeks' gestation	8-11 weeks: no delay 12-14 weeks: delay
	Macfie et al. (1991) ⁴⁸	Nonpregnant controls, first, second, and third trimesters	No delay in any trimester
	Geddes et al. (1991) ⁴¹	Postcesarean delivery Epidural fentanyl 100 µg	Delay
	Gin et al. (1991) ⁴²	Postpartum: day 1 and day 3, 6 weeks	No delay
	Wright et al. (1992) ⁵⁸	Labor with epidural bolus: (1) bupivacaine 0.375%; (2) bupivacaine 0.375% + fentanyl 100 µg	Epidural opioids: delay
	Whitehead et al. (1993) ⁵⁵	Nonpregnant controls, first, second, and third trimesters Postpartum: 2, 18-24, and 24-48 hours	Pregnancy: No change Postpartum: 2 hours: delay 18-24 hours: no delay 24-48 hours: no delay
	Ewah et al. (1993) ⁴⁰	Labor with epidural infusion: (1) bupivacaine 0.25%; (2) bupivacaine 0.25% + fentanyl 50 or 100 µg, or diamorphine 2.5 or 5 mg	Epidural opioids: delay
	Levy et al. (1994) ⁴⁷	Nonpregnant controls, 8-12 weeks' gestation	Delay

INGESTA ORAL DURANTE EL TP

- Aumenta la incidencia de Broncoaspiración?
- Aumenta la satisfacción materna?
- Reduce la Cetosis Materna?
- Mejora los resultados obstétricos?



Restricting oral fluid and food intake during labour (Review)

Singata M, Tranmer J, Gyte GML



This is a reprint of a Cochrane review, prepared and maintained by The Cochrane Collaboration and published in *The Cochrane Library* 2013, Issue 8

<http://www.thecochranelibrary.com>



REVISIÓN COCHRANE

- Se incluyeron 5 RCT (3130 gestantes)
- Gestantes en TP activo con bajo de riesgo de AG.
 - 1 RCT: NPO (solo cubos de hielo) vs Ingesta libre
 - 2 RCT: Agua vs Variedad de Líquidos y Sólidos
 - 2 RCT: Agua vs Bebidas con carbohidratos
- Estudio de O Sullivan (2009) predomina en estos resultados

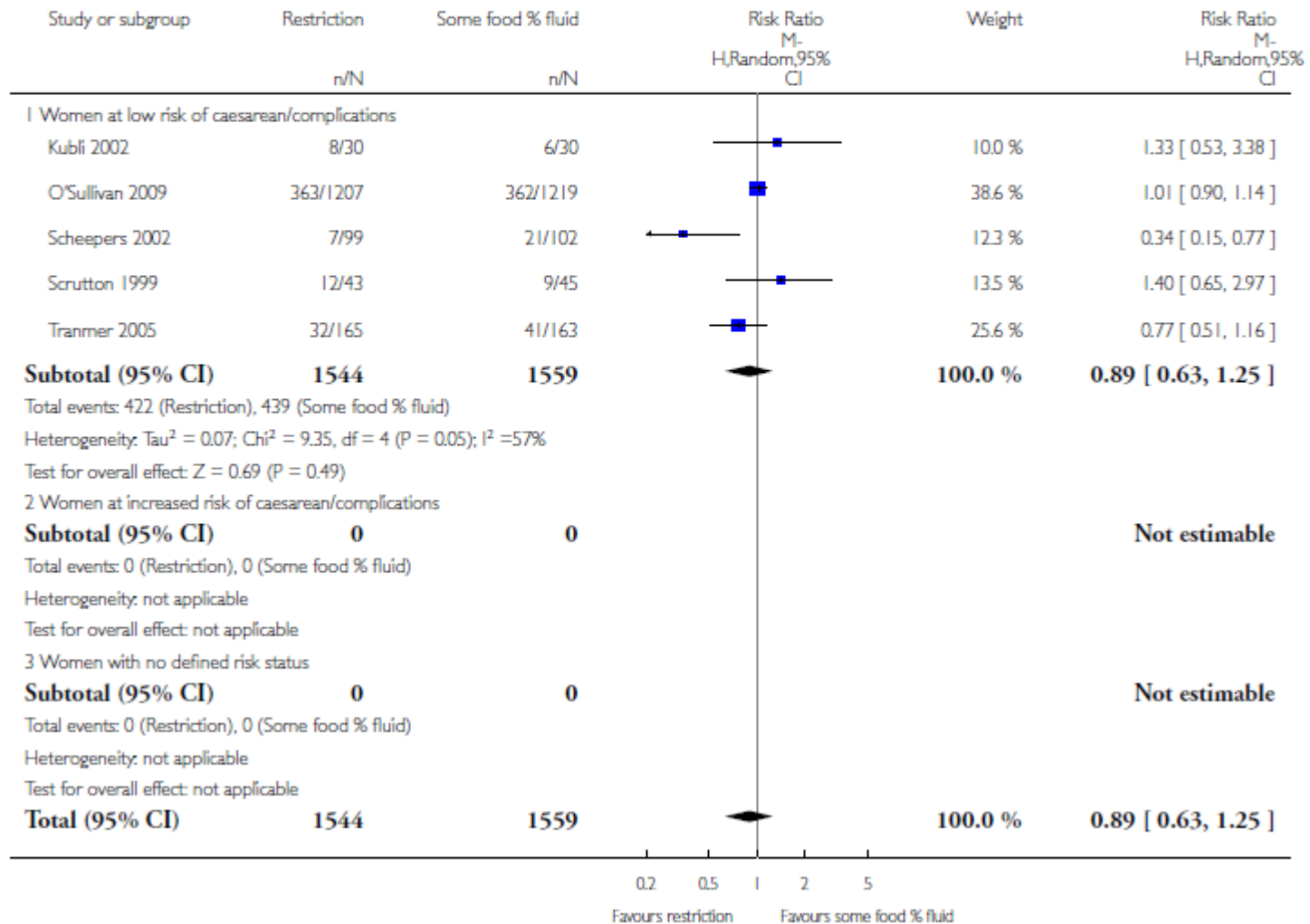


Analysis 1.1. Comparison 1 Any restriction of oral fluid and food versus some fluid and food, Outcome 1 Caesarean section (primary outcome).

Review: Restricting oral fluid and food intake during labour

Comparison: 1 Any restriction of oral fluid and food versus some fluid and food

Outcome: 1 Caesarean section (primary outcome)



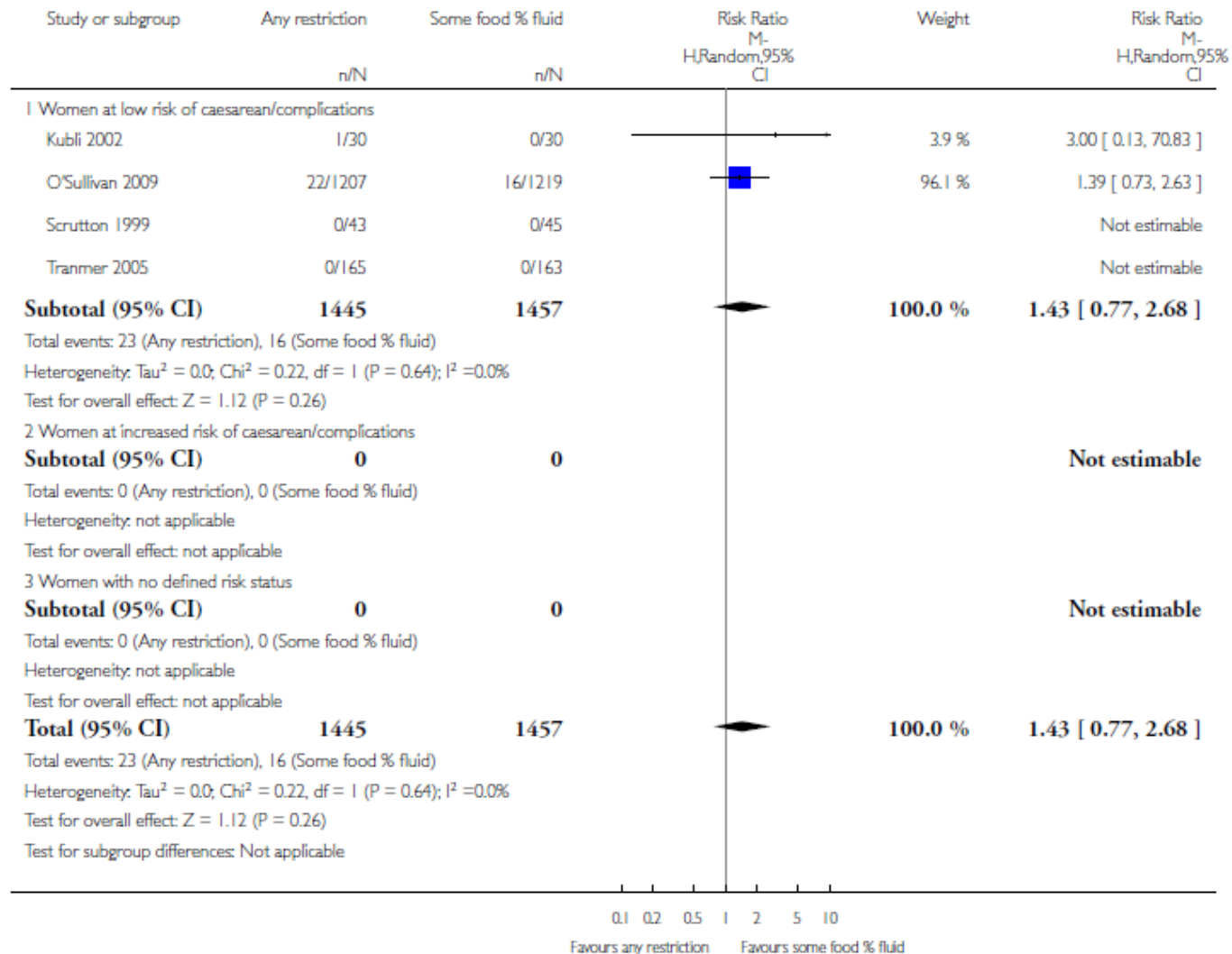
Restricting oral fluid and food intake during labour (Review)

Analysis 1.4. Comparison 1 Any restriction of oral fluid and food versus some fluid and food, Outcome 4 Apgar < 7 at 5 min (primary outcome).

Review: Restricting oral fluid and food intake during labour

Comparison: 1 Any restriction of oral fluid and food versus some fluid and food

Outcome: 4 Apgar < 7 at 5 min (primary outcome)



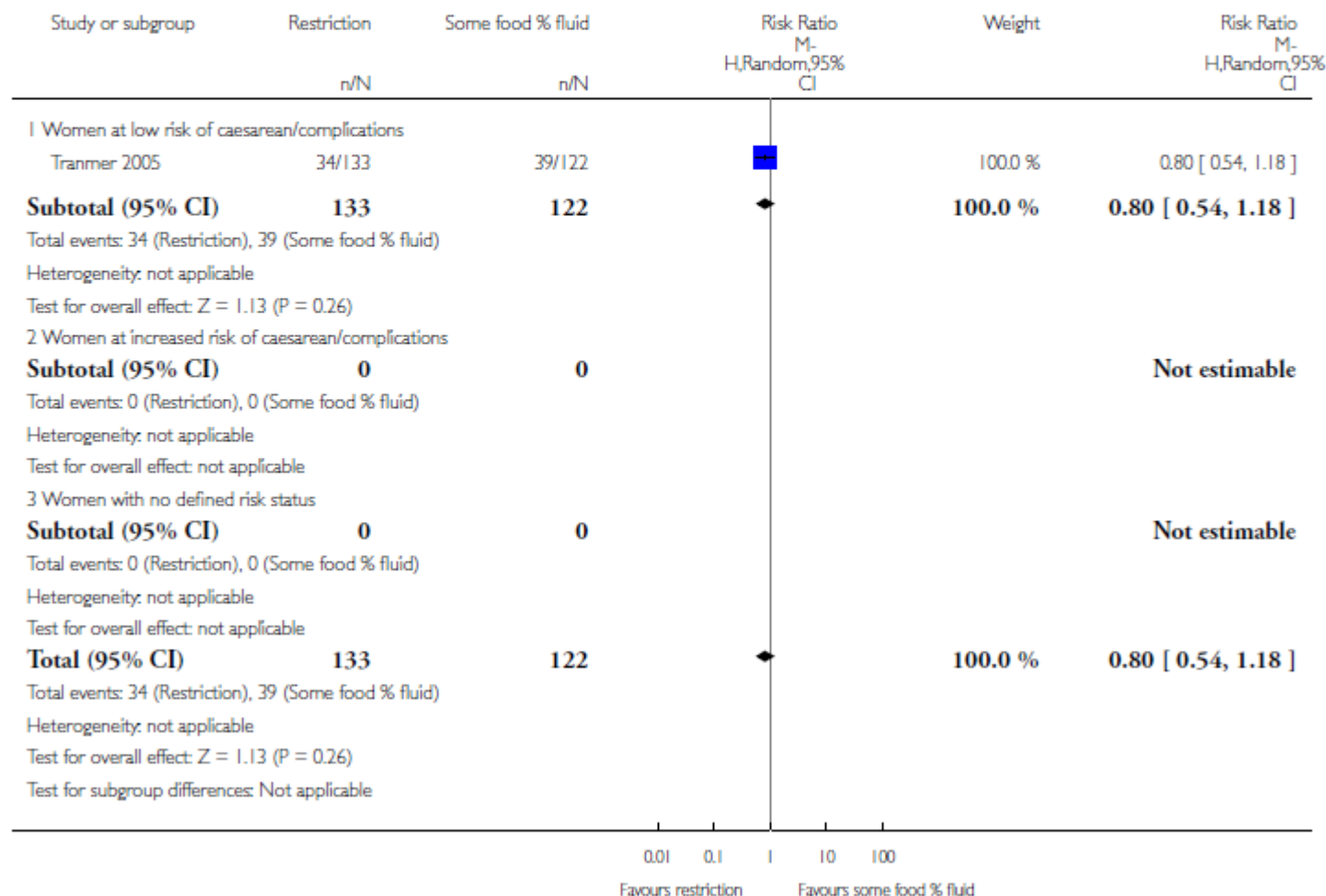
Restricting oral fluid and food intake during labour (Review)

Analysis 1.12. Comparison 1 Any restriction of oral fluid and food versus some fluid and food, Outcome 12 Maternal nausea.

Review: Restricting oral fluid and food intake during labour

Comparison: 1 Any restriction of oral fluid and food versus some fluid and food

Outcome: 12 Maternal nausea



Restricting oral fluid and food intake during labour (Review)

CONCLUSIÓN

- “Al no encontrarse evidencia de beneficio y/o daño de la ingesta oral en trabajo de parto no existe sustento de restricción rígida de líquidos o comida en pacientes de bajo riesgo”

Restricting oral fluid and food intake during labour (Review)

Singata M, Tranmer J, Gyte GML



THE COCHRANE
COLLABORATION®



RESULTADOS MEDIDOS

- Índices Metabólicos:

- Ingesta de comida y líquidos previene la cetosis materna.

- Volumen Gástrico:

- Ingesta de sólidos (pero no de líquidos) incrementa el volumen intra-gástrico.

- Resultados Obstétricos:

- No mejora los resultados obstétricos.



RECOMENDACIONES

- Abandonar las políticas de NPO estrictas en pacientes de bajo riesgo en TP.
- Líquidos claros y bebidas deportivas han demostrado disminuir la cetosis materna sin elevar el volumen gástrico.
- Ingesta de sólidos sigue siendo controversial, ya que no aporta beneficios objetivos.





GRACIAS

