



**VŠEOBECNÁ FAKULTNÍ
NEMOCNICE V PRAZE**



**1. LÉKAŘSKÁ
FAKULTA**
Univerzita Karlova

ERAS a císařský řez

-

ano, chceme!



Tereza Bartošová



Guidelines for Antenatal and Preoperative care in Cesarean Delivery: Enhanced Recovery After Surgery Society Recommendations (Part 1-part 3)



R. Douglas Wilson, MD, MSc; Aaron B. Caughey, MD, PhD; Stephen L. Wood, MD; George A. Macones, MD; Ian J. Wrench, MB ChB, PhD; Jeffrey Huang, MD; Mikael Norman, MD, PhD; Karin Pettersson, MD, PhD; William J. Fawcett, MBBS, FRCA, FFPMRCA; Medhat M. Shalabi, MD; Amy Metcalfe, PhD; Leah Gramlich, MD; Gregg Nelson, MD, PhD


Society for Obstetric Anesthesia and Perinatology: Consensus Statement and Recommendations for Enhanced Recovery After Cesarean

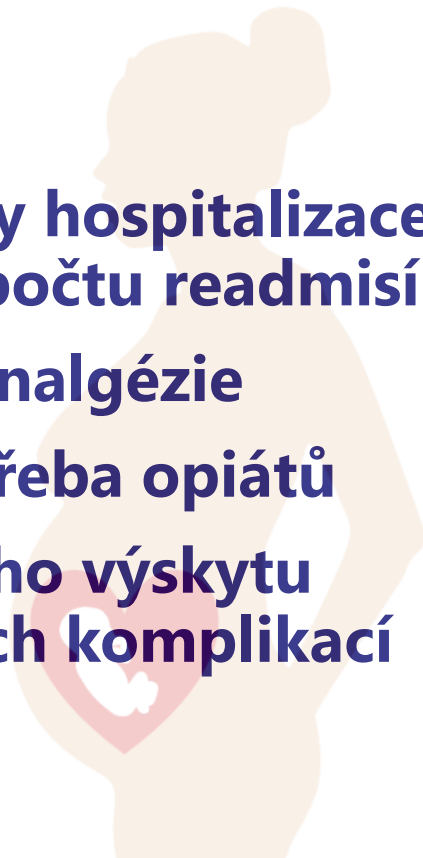


Laurent Bollag, MD,* Grace Lim, MD, MS,† Pervez Sultan, MBChB, FRCA, MD (Res),‡
Ashraf S. Habib, MBBCh, MSc, MHSc, FRCA,§ Ruth Landau, MD,|| Mark Zakowski, MD,¶
Mohamed Tiouririne, MD,# Sumita Bhambhani, MD,** and Brendan Carvalho, MBBCh, FRCA, MDCh‡



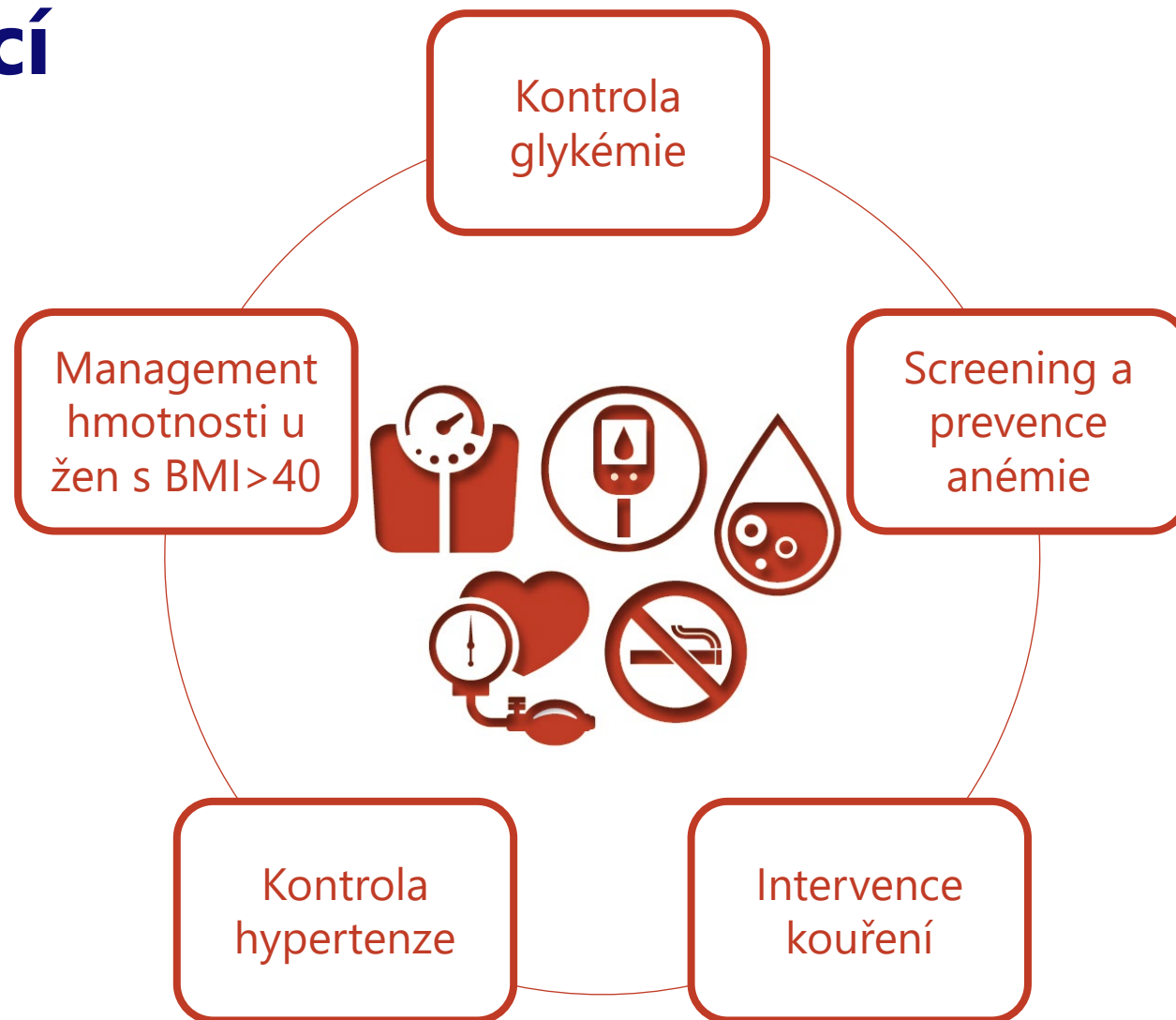
Proč zavádět ERAS na porodnici?

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- Zkrácení doby hospitalizace
 - Snížení nákladů na pooperační péči
 - Zavedení většiny opatření je velmi levné

- 
- Zkrácení doby hospitalizace bez zvýšení počtu readmisí
 - Lepší analgézie
 - Nižší spotřeba opiátů
 - Bez vyššího výskytu pooperačních komplikací



Před operací



Screening a prevence anémie

- Těhotenství je spojeno s diluční anémií
 - Anémie < 110 g/l
- U CS je předpokládána větší krevní ztráta než u mnoha jiných abdominálních výkonů
- Prenatální anémie je prediktorem postpartální





Před operací

Item	Recommendation	Evidence level	Recommendation grade
Preoperative bowel preparation (focused element)	1. Oral or mechanical bowel preparation should not be used before cesarean delivery.	High	Strong
Preoperative fasting (focused element)	1. Women should be encouraged to drink clear fluids (pulp-free juice, coffee, or tea without milk) until 2 hours before surgery.	High	Strong
	2. A light meal may be eaten up to 6 hours before surgery.	High	Strong
Preoperative carbohydrate supplementation (focused element)	1. Oral carbohydrate fluid supplementation, 2 hours before cesarean delivery, may be offered to nondiabetic women.	Low	Weak

- Lehké jídlo 6h předoperací
- Čiré tekutiny (≠ pouze voda) až 2 h před operací
- U nediabetiček zvážit podání sacharidového nápoje 2 h před výkonem
 - Doporučena dávka 45g sacharidů ≈ 400 ml jablečného džusu



Premedikace

Item	Recommendation	Evidence level	Recommendation grade
Preanesthetic medications (focused elements)	1. Antacids and histamine H2 receptor antagonists should be administered as premedication to reduce the risk from aspiration pneumonitis.	Low	Strong

H2 antagonisté > PPI

H2 antagonisté + antacida > samotná antacida

- Metoklopramid
 - ↑ funkci LES ↓ tonus pyloru ↓ objem žaludečního obsahu
 - Studie nedostatečné k prokázání benefitu



Premedikace

Item	Recommendation	Evidence level	Recommendation grade
Preanesthetic medications (focused elements)	2. Preoperative sedation should not be used for scheduled cesarean delivery because of the potential for detrimental effects on the mother and neonate.	<u>Low</u>	Strong

- Versus stresová reakce matky a její vliv na plod
- Studie ukazují, že malá dávka benzodiazepinů je bezpečná a zvyšuje komfort rodiček

Premedication with midazolam prior to caesarean section has no neonatal adverse effects[☆]

Ahmet Can Senel*, Fatih Mergan

Department of Anesthesiology and Critical Care, School of Medicine, Karadeniz Technical University, Trabzon, Turkey

Received 3 August 2012; accepted 27 August 2012

Diazepam in Labour: Its Metabolism and Effect on the Clinical Condition and Thermogenesis of the Newborn

JEAN E. CREE, JOSEPH MEYER, DAVID M. HAILEY

British Medical Journal, 1973, 4, 251-255

Summary

Following the administration of diazepam to mothers in labour the clinical effects, changes in thermogenesis, and metabolism of the drug in the newborn were observed under carefully controlled conditions. A total maternal dose of 30 mg or less in the 15 hours before delivery had little effect on the infants' state. Larger doses, however, were accompanied by low Apgar scores at birth, apnoeic spells, hypotonia, reluctance to feed, and an impaired metabolic response to a cold stress. Measurement of plasma levels of diazepam and its active metabolite showed that both products were detectable in significant concentrations in some infants for up to eight days. We conclude that greater care should be taken in the use of this otherwise effective drug for the treatment of pre-eclampsia.

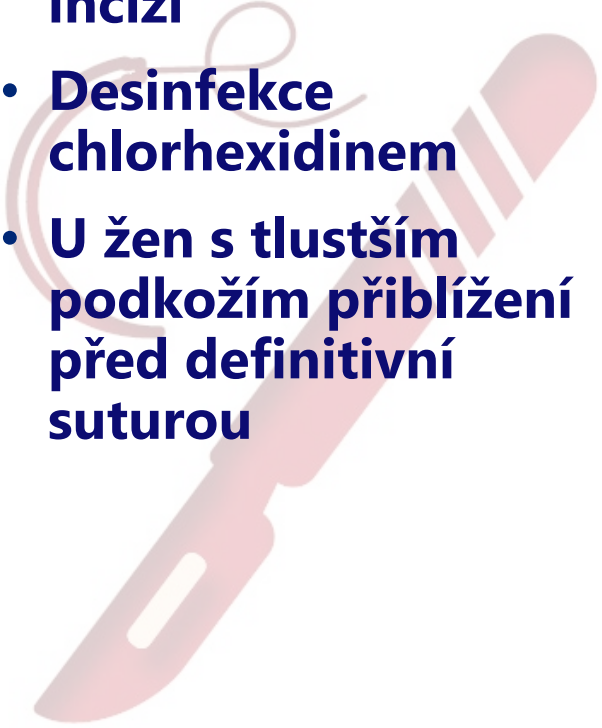
Joyce and Kenyon, 1972). There have, however, been reports of hypotonia (Flowers *et al.*, 1969; Rosanelli, 1970; Shannon *et al.*, 1972), low Apgar scores (Flowers *et al.*, 1969), and hypothermia (Owen *et al.*, 1972). Hyperbilirubinaemia was found to be due to the vehicle, sodium benzoate, with which the parenteral preparation was prepared (Schiff *et al.*, 1971).

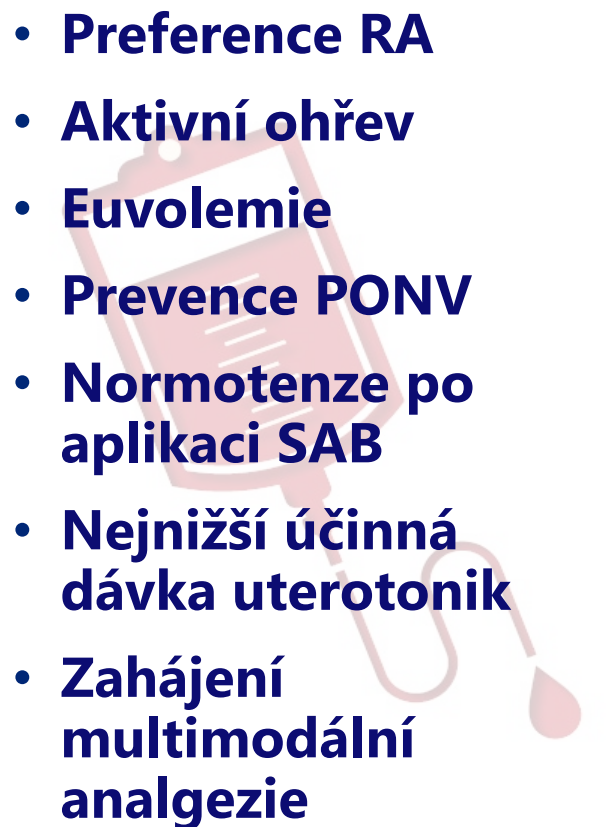
We have observed that infants become hypothermic and manifest symptoms of central nervous system depression after the maternal administration of diazepam during labour. The rapid, active transplacental passage of diazepam is well documented (Scher *et al.*, 1972; Shannon *et al.*, 1972). Its subsequent fate is less predictable, some studies showing that it is rapidly eliminated (Shannon *et al.*, 1972), while others have shown that it is detectable for long periods in the newborn circulation (Hailey *et al.*, 1973).

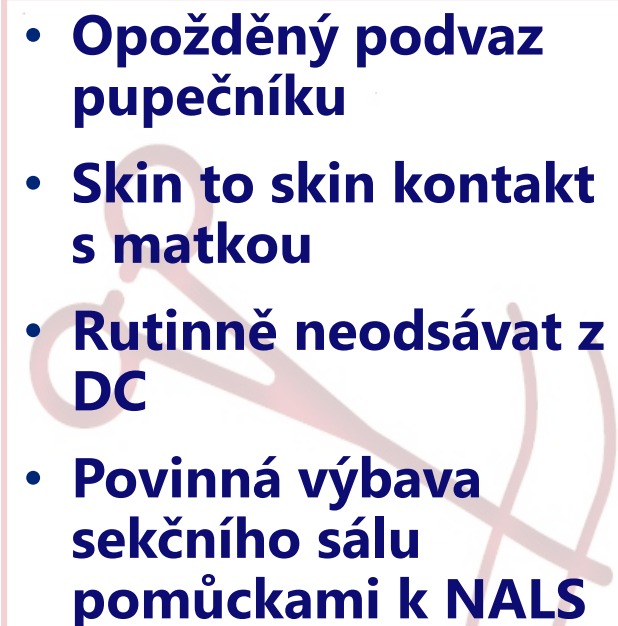
An investigation was therefore undertaken (a) to assess the clinical status of infants after maternal diazepam, (b) to measure their metabolic response to a physiological cold stress, and (c) to measure maternal, cord, and neonatal plasma levels of diazepam and its metabolite desmethyldiazepam.



Během operace

- **ATB 60 min před incizí**
 - **Desinfekce chlorhexidinem**
 - **U žen s tlustším podkožím přiblížení před definitivní suturou**
- 

- **Preference RA**
 - **Aktivní ohřev**
 - **Euvolemie**
 - **Prevence PONV**
 - **Normotenze po aplikaci SAB**
 - **Nejnižší účinná dávka uterotonik**
 - **Zahájení multimodální analgezie**
- 

- **Opožděný podvaz pupečníku**
 - **Skin to skin kontakt s matkou**
 - **Rutině neodsávat z DC**
 - **Povinná výbava sekčního sálu pomůckami k NALS**
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Pooperačně – prevence TEN

Variable	Item	Evidence level	Recommendation grade
Prophylaxis against thromboembolism (focused element)	(1) Pneumatic compression stockings should be used to prevent thromboembolic disease in patients who undergo cesarean delivery.	Low	Strong
	(2) Heparin should not be used routinely for venous thromboembolism prophylaxis in patients after cesarean delivery.	Low	Weak

- Hyperkoagulační stav
- Změny ve farmakokinetice LMWH
- 3x vyšší riziko TEN než u vaginálního porodu





Pooperačně – mobilizace

- Klid na lůžku není prevencí PDPH

> [J Chin Med Assoc. 2021 Aug 1;84\(8\):791-794. doi: 10.1097/JCMA.0000000000000562.](#)

The causal-effect of bed rest and post-dural puncture headache in patients receiving diagnostic lumbar puncture: A prospective cohort study

Chien-Shu Tai¹, Shang-Liang Wu², Shao-Yu Lin¹, Ying Liang¹, Shuu-Jiun Wang^{3 4 5 6},
Shih-Pin Chen^{3 4 5 6 7}

Affiliations + expand

PMID: 34074932 DOI: [10.1097/JCMA.0000000000000562](#)

Pooperačně – obnovení per os příjmu

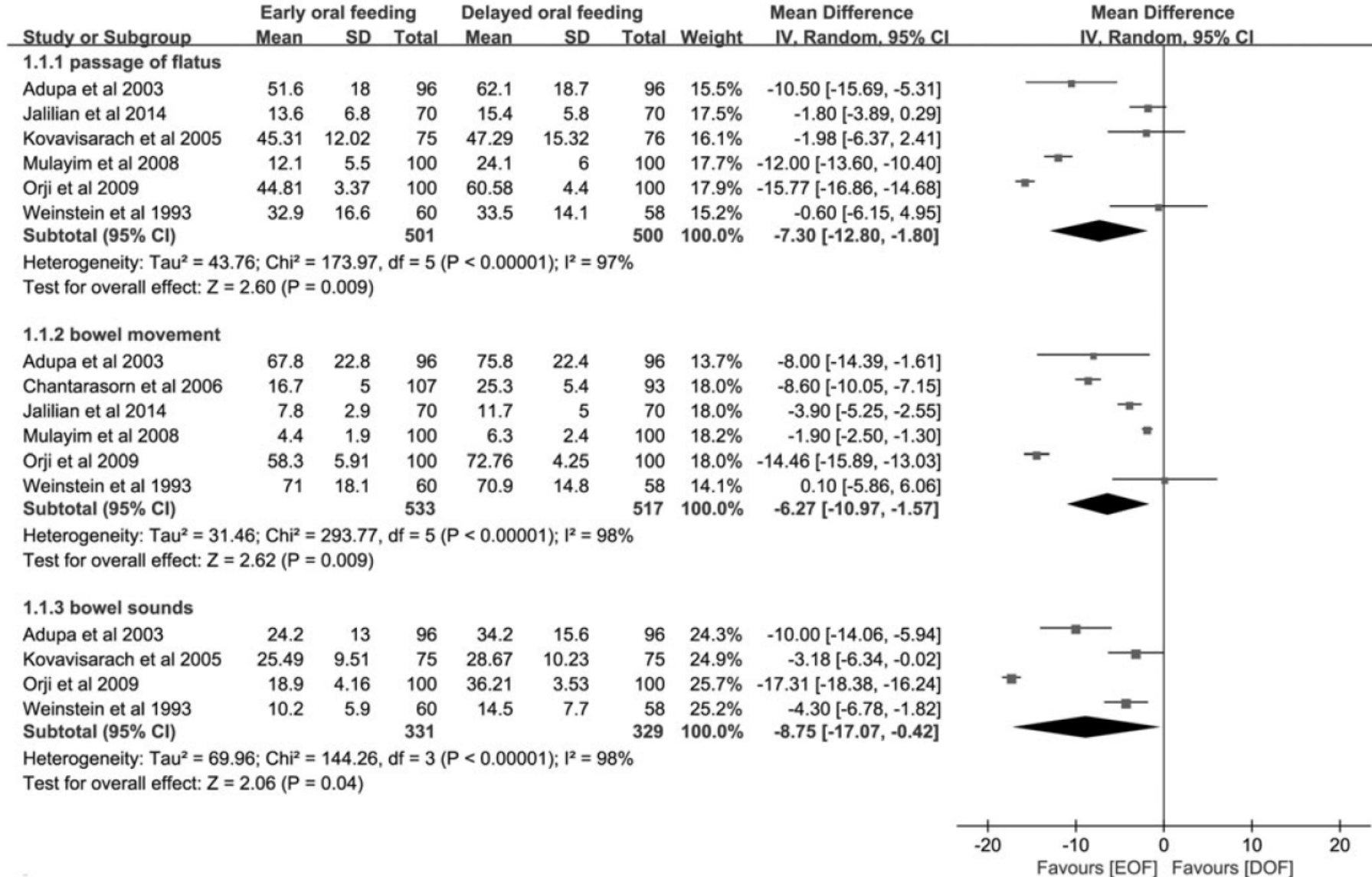
Variable	Item	Evidence level	Recommendation grade
Perioperative nutritional care (focused element)	A regular diet within the 2 hours after cesarean delivery is recommended.	High	Strong
Chewing gum after cesarean section (focused element)	Gum chewing appears to be effective and is low risk. It may be a redundant treatment if a policy for early oral intake is being used. However, it should be considered if delayed oral intake is planned.	Low	Weak

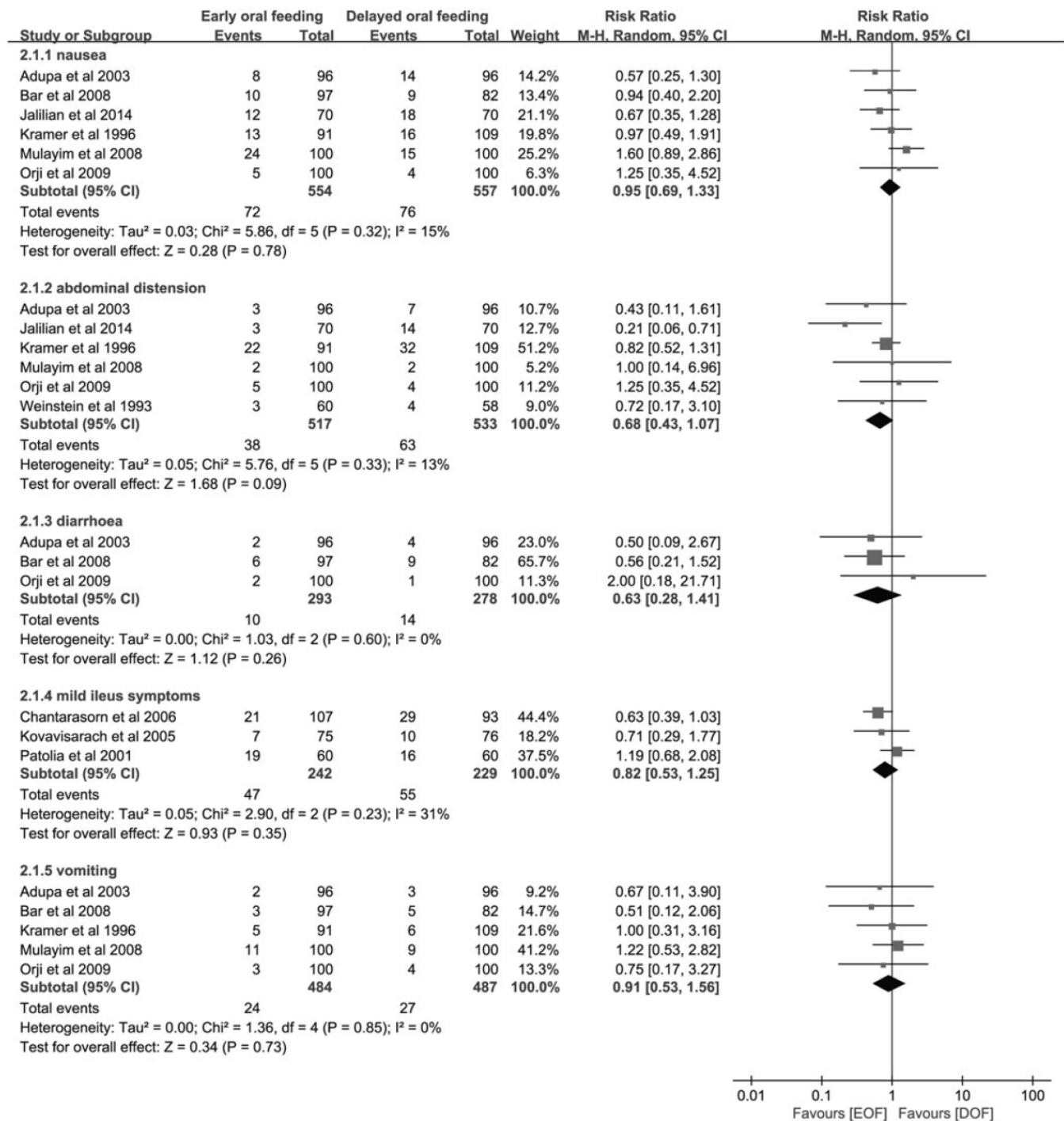


Early oral feeding compared with delayed oral feeding after cesarean section: a meta-analysis

J Matern Fetal Neonatal Med, Early Online: 1-7
 © 2015 Informa UK Ltd. DOI: 10.3109/14767058.2014.1002765

Huaping Huang, Haiyan Wang, and Mei He







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Děkuji za pozornost