Hur bråttom är det – egentligen?

Henrik Jörnvall
Överläkare, PhD
PMI, Karolinska Universitetssjukhuset

Hur bråttom är det –
egentligen?

Bråttom?

Omedelbart sectio

Larmsnitt

Katastrofsnitt

Urakut sectio

Kategori 1

JOURNAL OF THE ROYAL SOCIETY OF MEDICINE Volume 93 July 2000

Urgency of caesarean section: a new classification

D N Lucas FRCA S M Yentis MD FRCA S M Kinsel
M Wee FRCA[4] P N Robinson FRCA[5]

J R Soc Med 2000;93:346–350

Kategori 1	Omedelbart:	Omedelbar indikation p.g.a. livshot för mor eller barn
Kategori 2	Akut:	Akut indikation pga. mor eller barn men ej omedelbart livshotande
Kategori 3	Halvakut:	Indikation för akut förlossning men utan maternell eller fetal påverkan
Kategori 4	Elektivt:	Kejsarsnitt på elektiv indikation med minst 8 timmars framförhållning

SFOG, 2010

Grade	*Definition**
(1) Emergency	Immediate threat to life of woman or fetus
(2) Urgent	Maternal or fetal compromise which is not immediately life-threatening
(3) Scheduled	Needing early delivery but no maternal or fetal compromise
(4) Elective	At a time to suit the woman and maternity team

Hur bråttom?

DDI – Decision to delivery interval

1.4.3 Perform category 1 caesarean birth as soon as possible, and in most situations within 30 minutes of making the decision. **[2011, amended 2021]**

National Institute for Health and Care Excellence (NICE), 2024

DII – Decision to incision interval

- Kejsarsnitt ska kunna startas inom 15 minuter efter att beslut tagits om operation.

SFAI, 2021

Olika grader i 

Grade	Definition*
(1) Emergency	Immediate threat to life of woman or fetus
(2) Urgent	Maternal or fetal compromise which is not immediately life-threatening
(3) Scheduled	Needing early delivery but no maternal or fetal compromise
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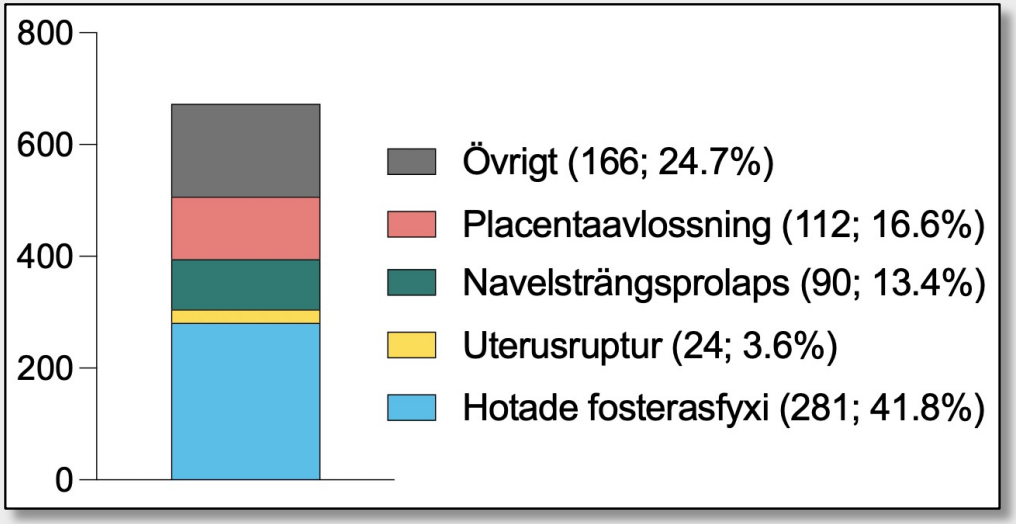
Placentaavlossning

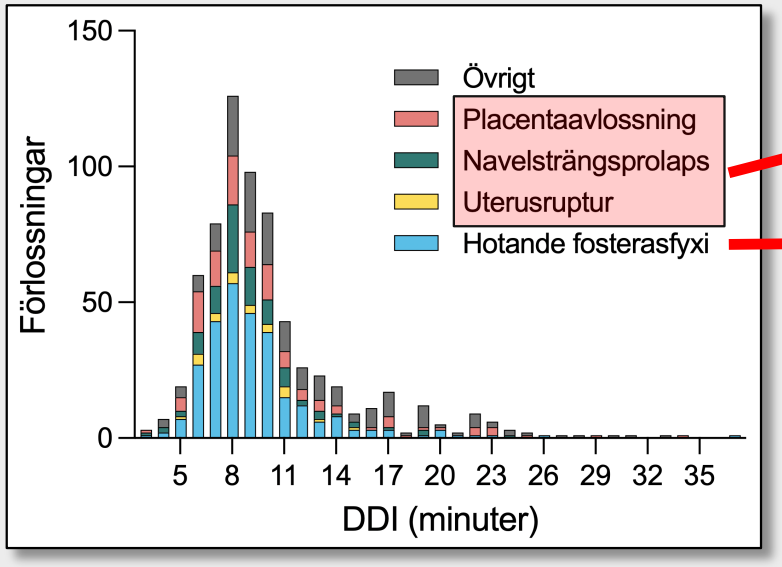
Navelsträngsprolaps

Uterusruptur

Hotande fosterasfyxi

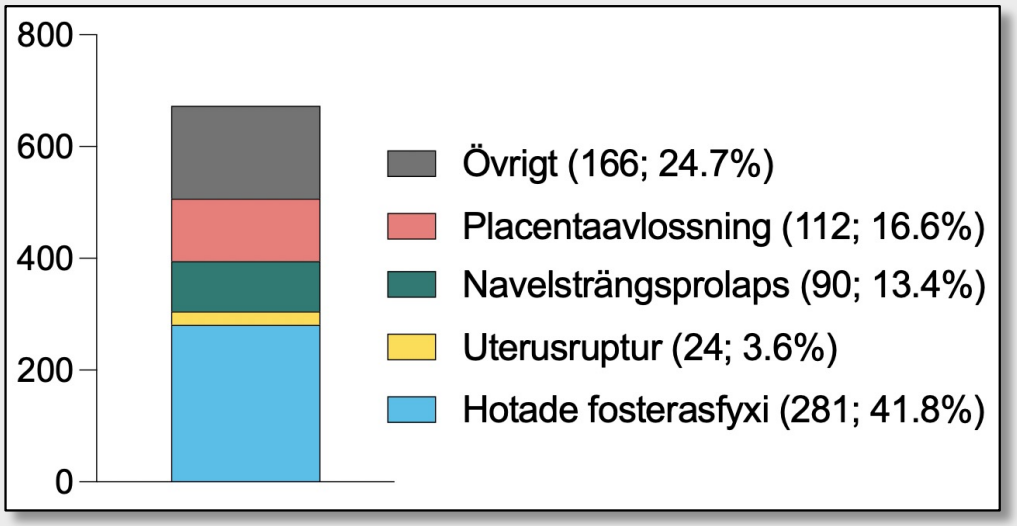


Olika grader i 

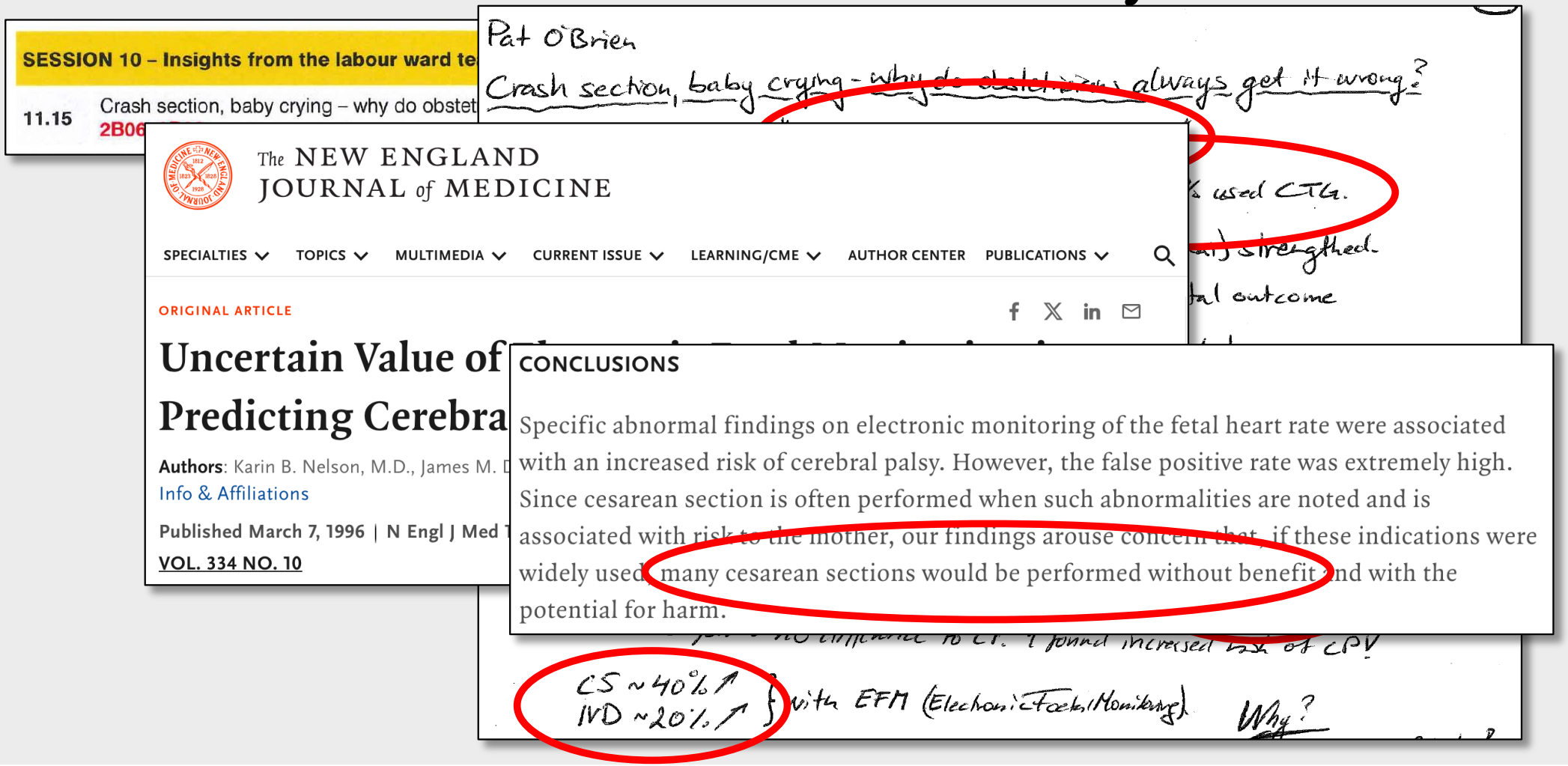


Irreversibla diagnoser

Intrauterin resuscitering?



Hotande fosterasfyxi



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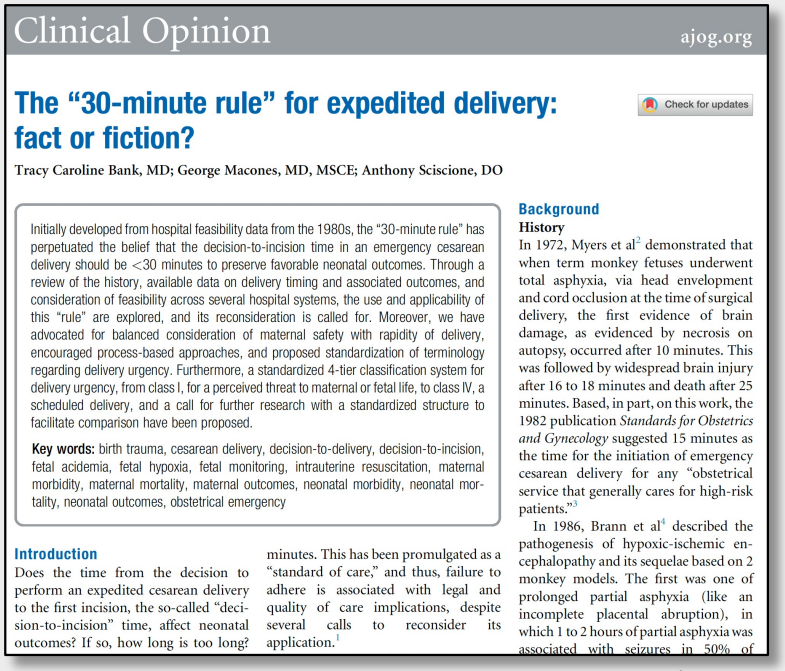

Clinical Opinion ajog.org

The "30-minute rule" for expedited delivery: fact or fiction?

Check for updates

Tracy Caroline Bank, MD; George Macones, MD, MSCE; Anthony Sciscione, DO

Initially developed from hospital feasibility data from the 1980s, the "30-minute rule" has perpetuated the belief that the decision-to-incision time in an emergency cesarean delivery should be <30 minutes to preserve favorable neonatal outcomes. Through a review of the history, available data on delivery timing and associated outcomes, and consideration of feasibility across several hospital systems, the use and applicability of this "rule" are explored, and its reconsideration is called for. Moreover, we have advocated for balanced consideration of maternal safety with rapidity of delivery, encouraged process-based approaches, and proposed standardization of terminology regarding delivery urgency. Furthermore, a standardized 4-tier classification system for delivery urgency, from class I, for a perceived threat to maternal or fetal life, to class IV, a scheduled delivery, and a call for further research with a standardized structure to facilitate comparison have been proposed.

Key words: birth trauma, cesarean delivery, decision-to-delivery, decision-to-incision, fetal acidemia, fetal hypoxia, fetal monitoring, intrauterine resuscitation, maternal morbidity, maternal mortality, maternal outcomes, neonatal morbidity, neonatal mortality, neonatal outcomes, obstetrical emergency

Introduction

Does the time from the decision to perform an expedited cesarean delivery to the first incision, the so-called "decision-to-incision" time, affect neonatal outcomes? If so, how long is too long? minutes. This has been promulgated as a "standard of care," and thus, failure to adhere is associated with legal and quality of care implications, despite several calls to reconsider its application.[1]

Background

History

In 1972, Myers et al[2] demonstrated that when term monkey fetuses underwent total asphyxia, via head envelopment and cord occlusion at the time of surgical delivery, the first evidence of brain damage, as evidenced by necrosis on autopsy, occurred after 10 minutes. This was followed by widespread brain injury after 16 to 18 minutes and death after 25 minutes. Based, in part, on this work, the 1982 publication *Standards for Obstetrics and Gynecology* suggested 15 minutes as the time for the initiation of emergency cesarean delivery for any "obstetrical service that generally cares for high-risk patients."[3]

In 1986, Brann et al[4] described the pathogenesis of hypoxic-ischemic encephalopathy and its sequelae based on 2 monkey models. The first was one of prolonged partial asphyxia (like an incomplete placental abruption), in which 1 to 2 hours of partial asphyxia was associated with seizures in 50% of

ajog, 2023

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tality, neonatal outcomes, obstetrical emergency

Hypoxic ischemic encephalopathy (asphyxia).

Författare: Brann AW Jr

Källa: Pediatric clinics of North America [Pediatr Clin North Am] 1986 Jun; Vol. 33 (3), pp. 451-64.

Two patterns of perinatal brain damage and their conditions of occurrence

Författare: Myers, Ronald E.

Källa: American Journal of Obstetrics and Gynecology; January 1972, Vol. 112 Issue: 2 p246-276, 31p

Publiceringsår: 1972

Dokumenttyp: Article

Sammanfattning: Term monkey fetuses may be subjected to episodes of totalasphyxia characterized by complete stoppage of respiratory gas exchange. Such animals, after resuscitation and extended survival,

Introduction

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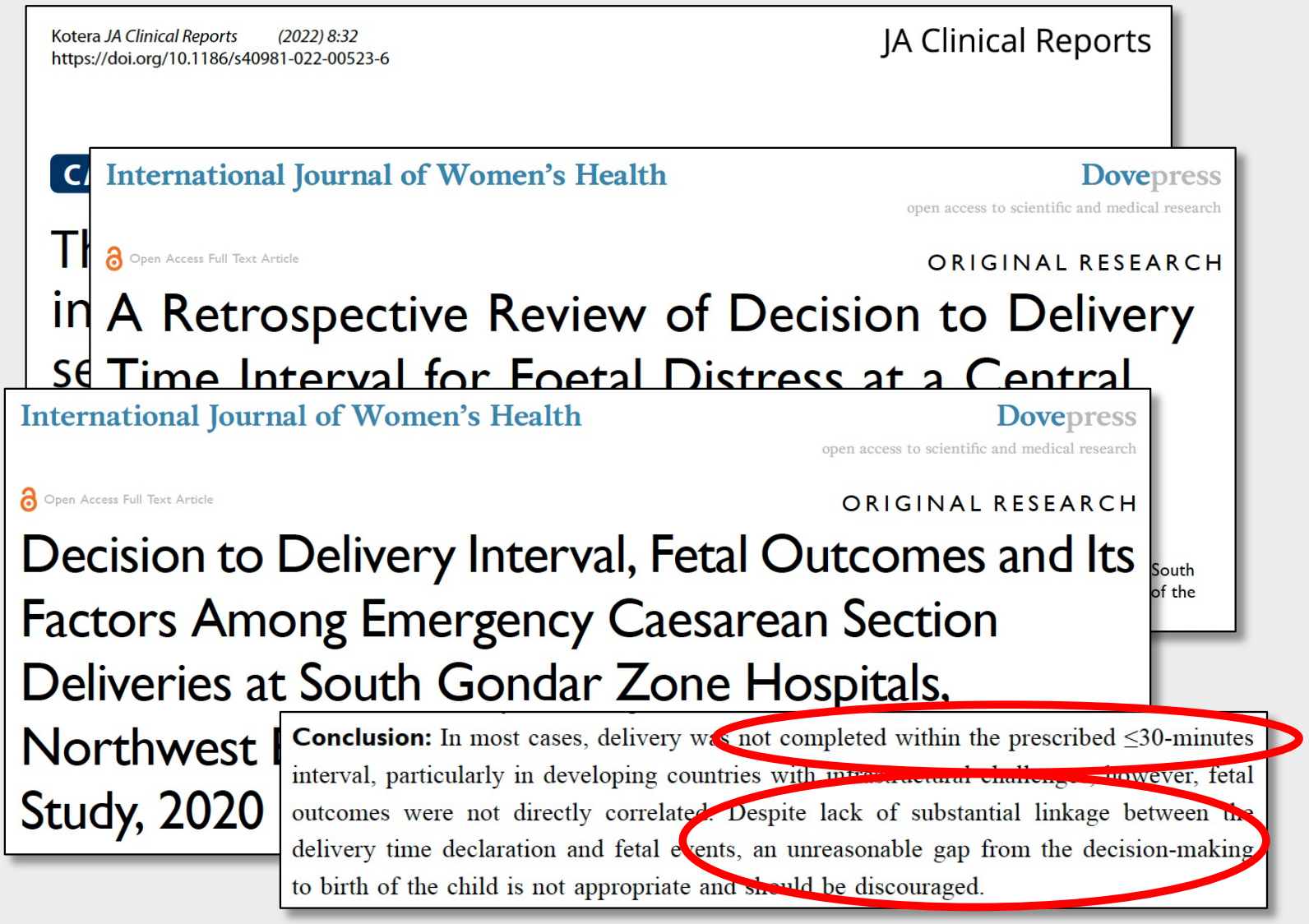

Kotera JA Clinical Reports (2022) 8:32
https://doi.org/10.1186/s40981-022-00523-6
JA Clinical Reports
International Journal of Women's Health
Dovepress
open access to scientific and medical research
Open Access Full Text Article
ORIGINAL RESEARCH
A Retrospective Review of Decision to Delivery
International Journal of Women's Health
Dovepress
open access to scientific and medical research
Open Access Full Text Article
ORIGINAL RESEARCH
Decision to Delivery Interval, Fetal Outcomes and Its Factors Among Emergency Caesarean Section Deliveries at South Gondar Zone Hospitals, Northwest
Study, 2020
Conclusion: In most cases, delivery was not completed within the prescribed ≤30-minutes interval, particularly in developing countries with
however, fetal outcomes were not directly correlated. Despite lack of substantial linkage between the delivery time declaration and fetal events, an unreasonable gap from the decision-making to birth of the child is not appropriate and should be discouraged.

RESEARCH

Evaluating the decision-to-delivery interval in category 1 emergency caesarean sections at a tertiary referral hospital

E Andisha, MB ChB, DA (SA), FCA (SA), MMed; **L Cronjé**, MB ChB, FCA (SA)

Departm

Conclusion. The study demonstrated that achieving a DDI of 30 minutes within the current organisational structure, institutional policies and staffing pattern is very rare. However, units should still benchmark against the internationally recommended 30-minute target as an indicator of unit efficiency and to improve quality of care. Despite absence of correlation between the DDI and the 5-minute Apgar score, unjustified delay from the decision-making to delivery of the baby is not acceptable.

PAIN MEDICINE

Anesthesiology 2009; 110:131–9

Liability Associated with Obstetric Anesthesia

A Closed Claims Analysis

Joanna M. Davies, F.R.C.A., Karen L. Posner, Ph.D.,† Lorri A. Lee, M.D.,‡ Frederick W. Cheney, M.D.,§ Karen B. Domino, M.D., M.P.H.‖*

BJOG: an International Journal of Obstetrics and Gynaecology
May 2002, Vol. 109, pp. 498–504

What is a reasonable time from decision-to-delivery by caesarean section? Evidence from 415 deliveries

Conclusion Fewer than 40% intrapartum deliveries by caesarean section for fetal distress were achieved within 30 minutes of the decision, despite that being the unit standard. There was, however, no evidence to indicate that overall an interval up to 120 minutes was detrimental to the neonate unless the delivery was a 'crash' caesarean section. These data thus do not provide evidence to sustain the recommendation of a standard of 30 minutes for intrapartum delivery by caesarean section.

in vivo *34*: 3341-3347 (2020)
doi:10.21873/invivo.12172

Evaluating the Decision-to-Delivery Interval in Emergency Cesarean Sections and its Impact on Neonatal Outcome

JANNA-ALICA BRANDT, BERND MORGENSTERN, FABINSHY THANGARAJAH, BERTHOLD GRÜTTNER, SEBASTIAN LUDWIG, CHRISTIAN EICHLER, JESSIKA RATIU, PETER MALLMANN and DOMINIK RATIU

Department of Obstetrics and Gynecology, Me

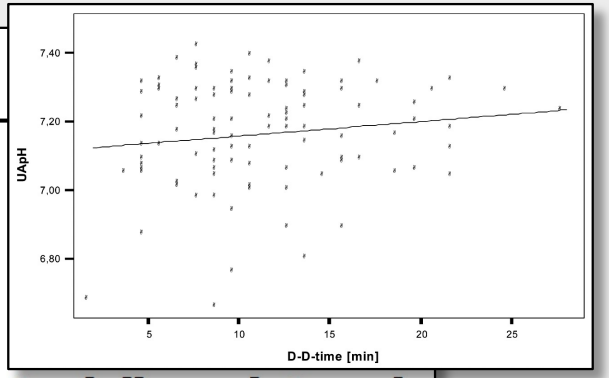
of adverse neonatal outcome (p=0.123). Conclusion: Awareness of influence on DDI might contribute to expediting DDI, but duration of DDI showed no impact on the incidence of adverse neonatal outcome. Data were not adequate to suggest a recommendation for DDI time standards.

Arch Gynecol Obstet (2005) 273: 161–165
DOI 10.1007/s00404-005-0045-7

ORIGINAL ARTICLE

P. Hillemanns · A. Strauss · U. Hasbargen · A. Schulze
O. Genzel-Boroviczeny · E. Weninger · H. Hepp

Crash emergency cesarean section: decision-to-delivery interval under 30 min and its effect o



phological reason could be identified. Very short deci-
sion-to-delivery times below 20 min were inversely
correlated to fetal outcome, i.e., lower umbilical blood

BJOG: an International Journal of Obstetrics and Gynaecology
July 2003, Vol. 110, pp. 679–683

Pregnancy outcome in severe placental abruption

Salma Imran Kayani[a], Stephen A. Walkinshaw[a,*], Carrol Preston[b]

Conclusion In this small study of severe placental abruption complicated by fetal bradycardia, a decision to delivery interval of 20 minutes or less was associated with substantially reduced neonatal morbidity and mortality.

Original Article

Evaluation of timings and outcomes in category-one caesarean sections: A retrospective cohort study

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Department of Women's Anaesthesia, KK Women's and Children's Hospital, 100 Bukit Timah Road,
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E-mail: sng
singl

Clare Newton Dunn[1], Qianpian Zhang[2], Josh Tjunrong Sia[3], Pryseley Nkouibert Assam[4,5], Shephali Tagore[6], Ban Leong Sng[1,7]

Departments of [1]Women's Anaesthesia and [6]Maternal Fetal Medicine, KK Women's and Children's Hospital, [2]Sing Health Anaesthesiology Residency Programme, Singapore Health Services, [3]International Bacclaureate Diploma Programme, Anglo-Chinese School (Independent), [4]Centre for Quantitative Medicine, Duke-NUS

outcomes than regional anaesthesia (RA). **Conclusions:** Our 'crash' CS protocol achieved 100% of deliveries within 30 min. The majority (88.9%) of the patients had GA for category-one CS. GA was found to be associated with shorter anaesthesia and operation times, but poorer perinatal outcomes compared to RA.

European Journal of Obstetrics & Gynecology and Reproductive Biology 159 (2011) 276–281

Contents lists available at ScienceDirect

European Journal of Obstetrics & Gynecology and Reproductive Biology

journal homepage: www.elsevier.com/locate/ejogrb

Target decision to delivery intervals for emergency caesarean section based on neonatal outcomes and three year follow-up

Greg A.

Conclusions: Our data suggest that clinical triage is effective, with the more compromised fetus delivered more rapidly using general anaesthesia. For Category 1 deliveries a 30 min target DDI is appropriate, although those born after longer DDI did not show developmental impairment. For Category 2 caesarean

Cite this article as: BMJ, doi:10.1136/bmj.38031.775845.7C (published 15 March 2004)

Papers

National cross sectional survey to determine whether the decision to delivery interval is critical in emergency caesarean section

Jane Thomas, Shantini Paranjothy, David James

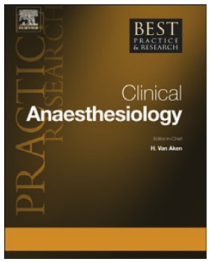
Conclusion A decision to delivery interval of 30 minutes is not an absolute threshold for influencing baby outcome. Decision to delivery intervals of more than 75 minutes are associated with poorer maternal and baby outcomes and should be avoided.

Best Practice & Research Clinical Anaesthesiology 31 (2017) 49–56

Contents lists available at ScienceDirect

Best Practice & Research Clinical Anaesthesiology

journal homepage: www.elsevier.com/locate/bean



5

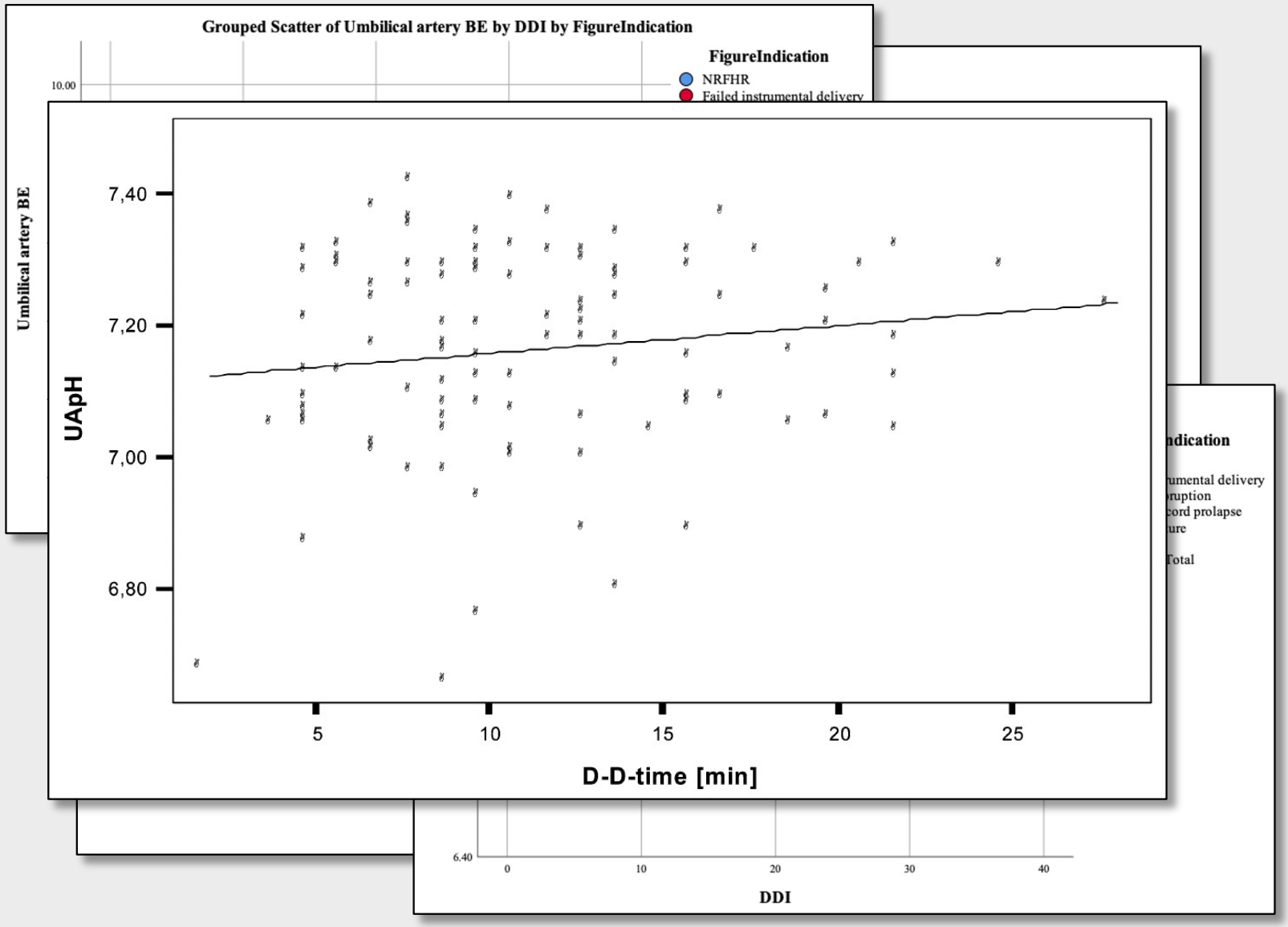
Decision-to-delivery interval: Is 30 min the magic time? What is the evidence? Does it work?

J.H.

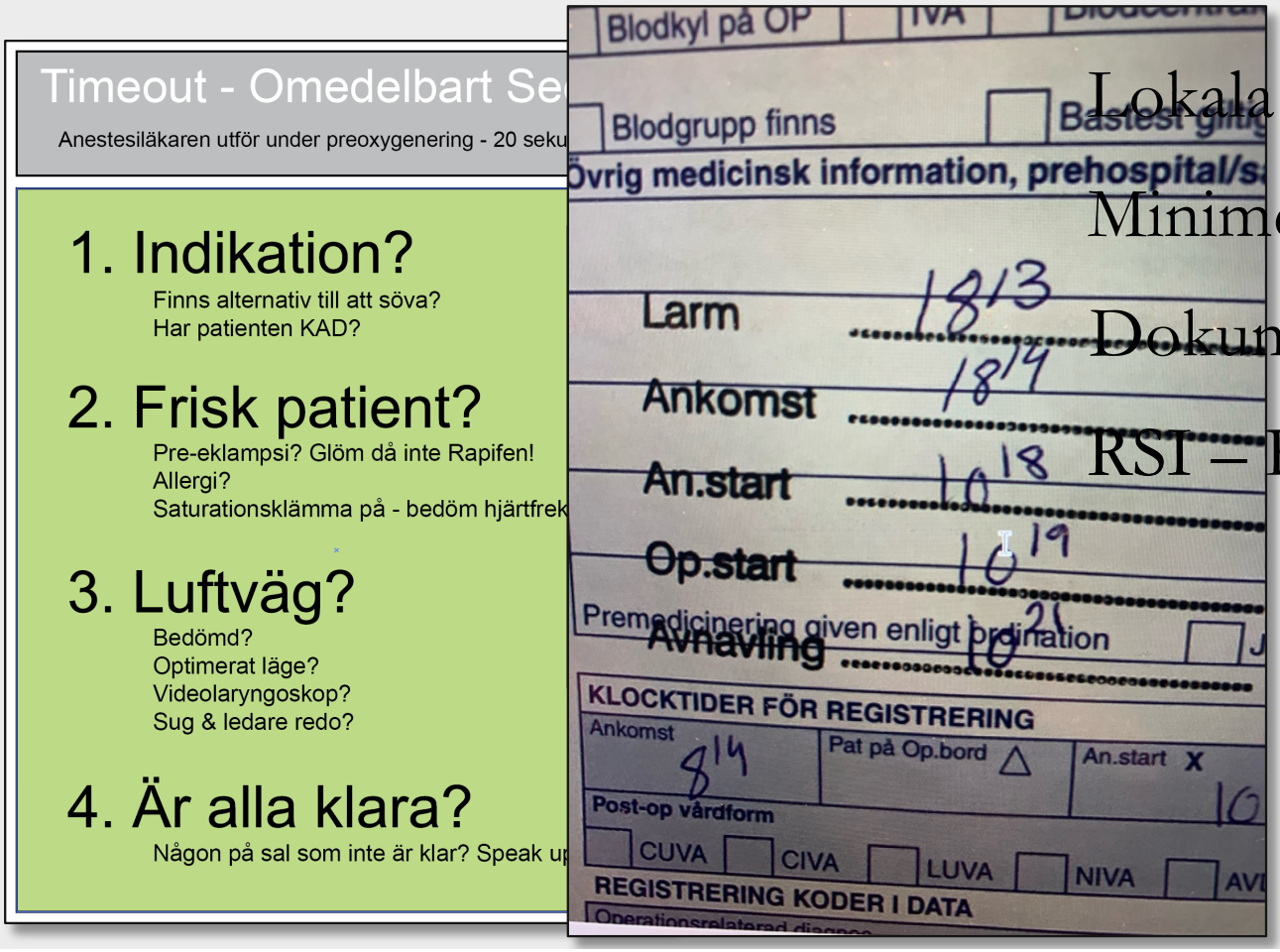
What is the current evidence for a 30-min time frame?

There is little, if any, evidence and no randomised controlled trial to support that a DDI of 30 min results in a better outcome for the mother or neonate. The majority of the evidence is linked to observational data.

- There is little evidence to support a DDI of 30 min.
- Faster deliveries have been associated with poorer neonatal outcomes, possibly secondary to obstetric teams acting more quickly in the face of more severe signs of foetal distress.
- Rapid delivery has the potential to cause harm to the mother and baby.


Grouped Scatter of Umbilical artery BE by DDI by FigureIndication
FigureIndication
NRFHR
Failed instrumental delivery
Umbilical artery BE
10.00
6.40
0
10
20
30
40
DDI
UApH
7,40
7,20
7,00
6,80
5
10
15
20
25
D-D-time [min]

I praktiken…



Lokala rutiner

Minimera risker

Dokumentera och följ upp

RSI – Rapid Spinal Induction

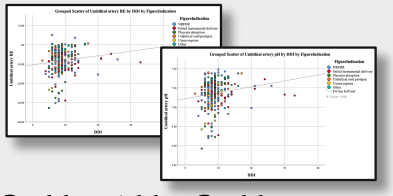
Hur bråttom är det – egentligen?

Teori: Extremt bråttom

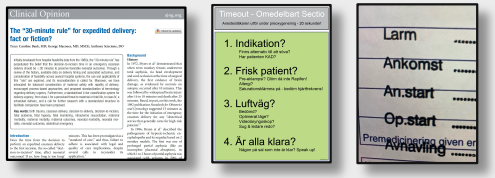
Grade	Definition*
(1) Emergency	Immediate threat to life of woman or fetus

Expert opinion: Troligen ganska bråttom

Evidensbaserat: Inte så bråttom som man kan tro?



Verkligheten: Definitivt bråttom från fall till fall



Fråga: Registrerar ni tider?

1. Ja, DDI – Decision to Delivery

2. Ja, DII – Decision to Incision

3. Ja, Sedvanliga tider enligt SPOR

4. Nej