FÖRLOSSNINGSANALGESI

241021

HANNAH LAFRENZ

VÅRDENHETSÖVERLÄKARE OP 2 SAHLGRENSKA UNIVERSITETSSJUKHUSET/ÖSTRA

Allmänt – förlossningssmärta

Icke-famakologisk smärtlindring

Opioider. Inhalationsanestetika

Regional anestesi- EDA, spinal

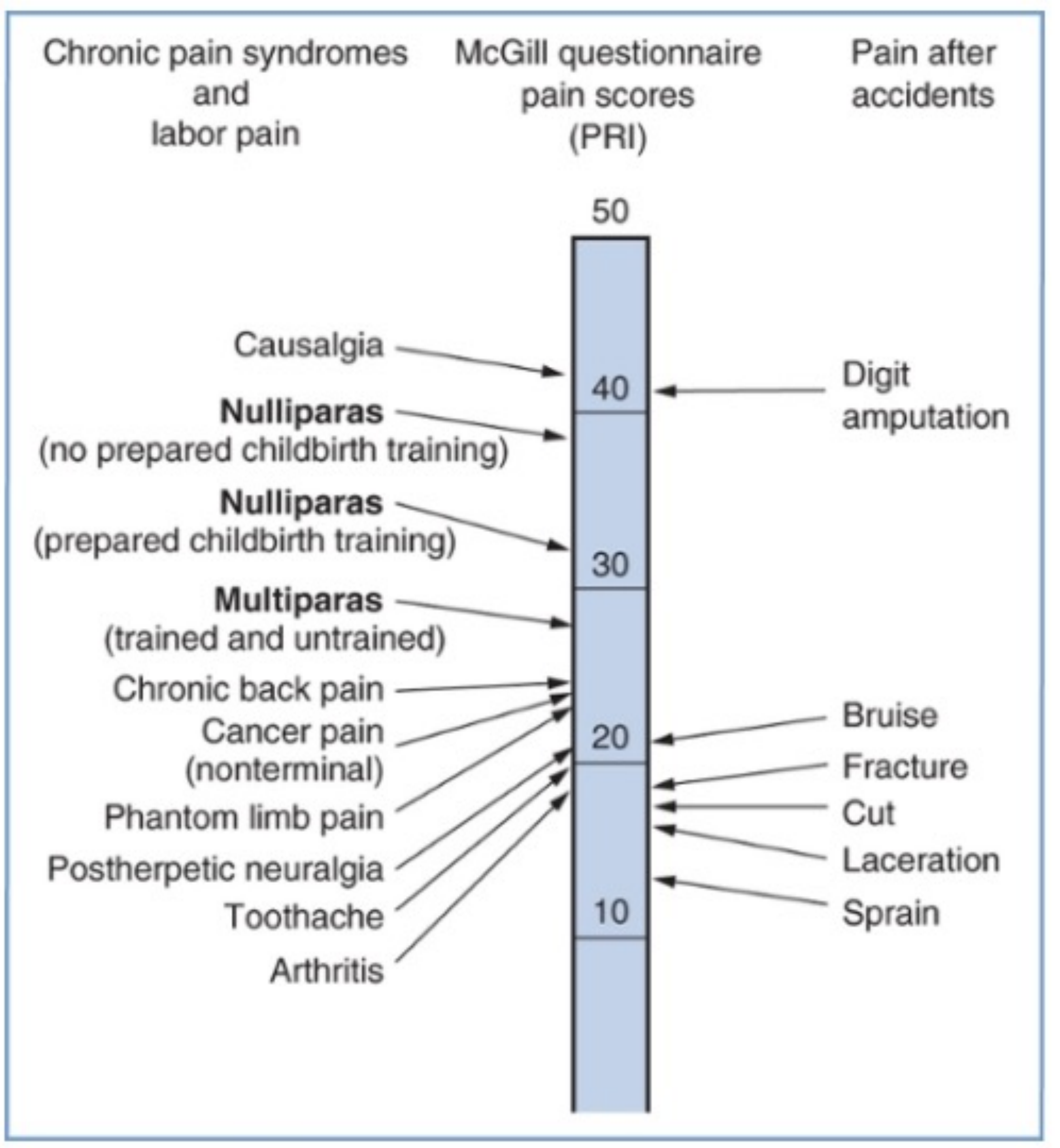
” Stor skall jag göra din möda när du är havande, med smärta skall du föda dina barn.” (1Mos 3:16)

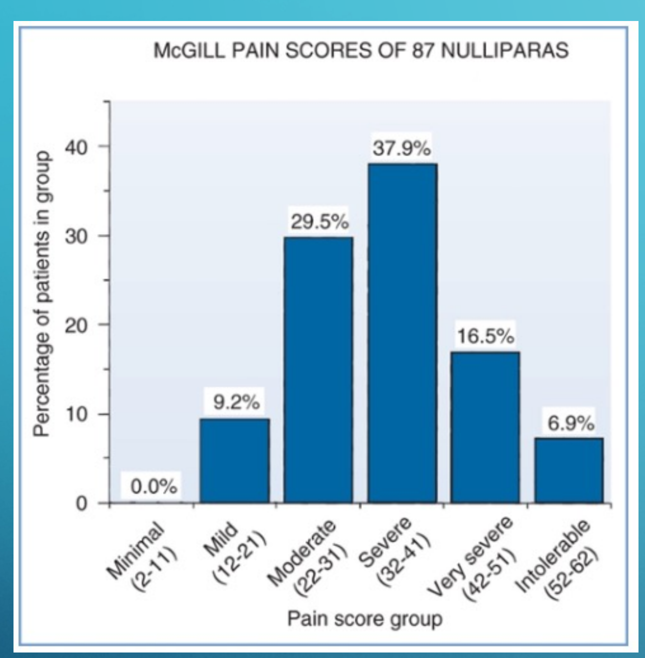
HISTORIK

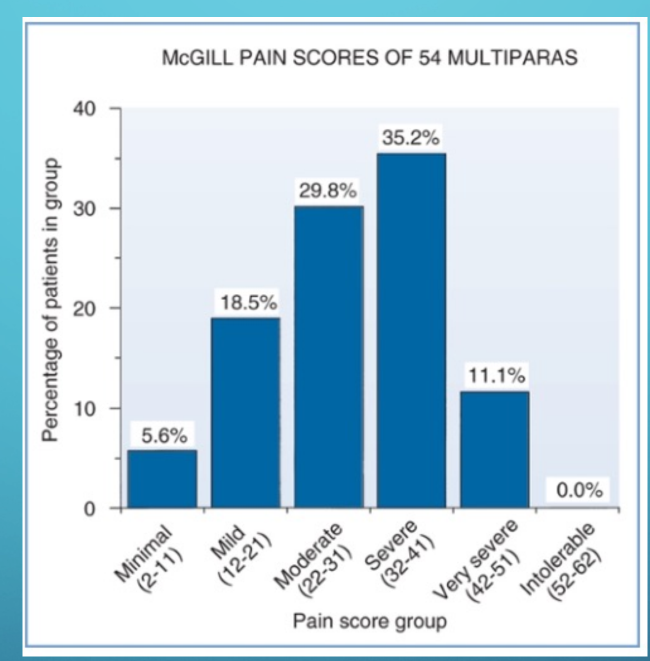
- Eter och kloroform. 1847
- Opioder. ”Twiglight sleep”, 1920-talet
- Regional anestesi, 1960-talet
- Riksdagsbeslut 1973. Kvinnan har rätt till smärtlindring om hon så önskar

ÅSIKTERNA ÄR MÅNGA MEN…

…att föda barn är ,för majoriteten av kvinnor, en smärtsam upplevelse!


Chronic pain syndromes and labor pain
McGill questionnaire pain scores (PRI)
Pain after accidents
50
40
30
20
10
Causalgia
Nulliparas
(no prepared childbirth training)
Nulliparas
(prepared childbirth training)
Multiparas
(trained and untrained)
Chronic back pain
Cancer pain
(nonterminal)
Phantom limb pain
Postherpetic neuralgia
Toothache
Arthritis
Digit amputation
Bruise
Fracture
Cut
Laceration
Sprain





- Förstföderskor upplever mer smärta än omföderskor

FÖRLOSSNINGSSMÄRTA

Öppningsskede:

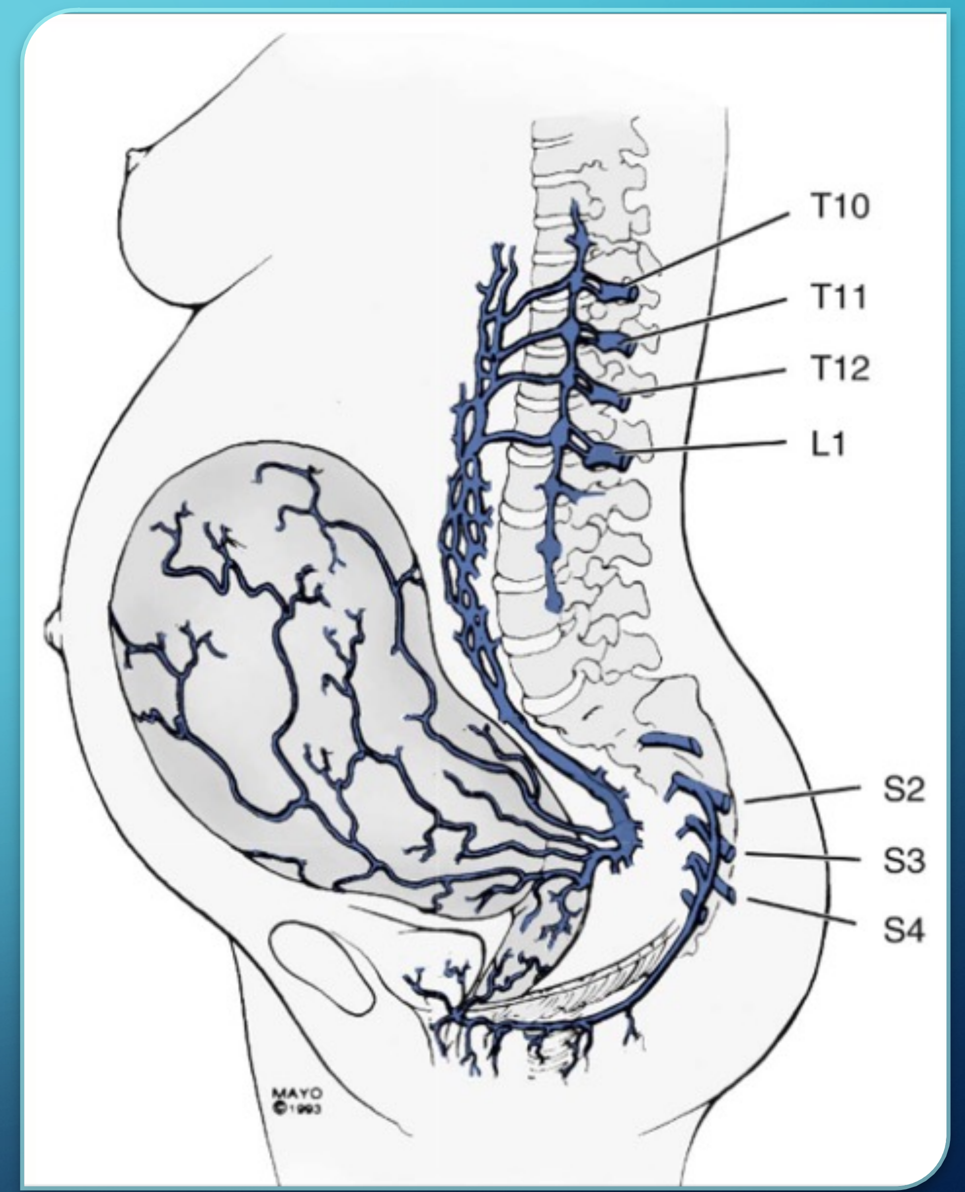
Afferenta C-fibrer. Visceral smärta.

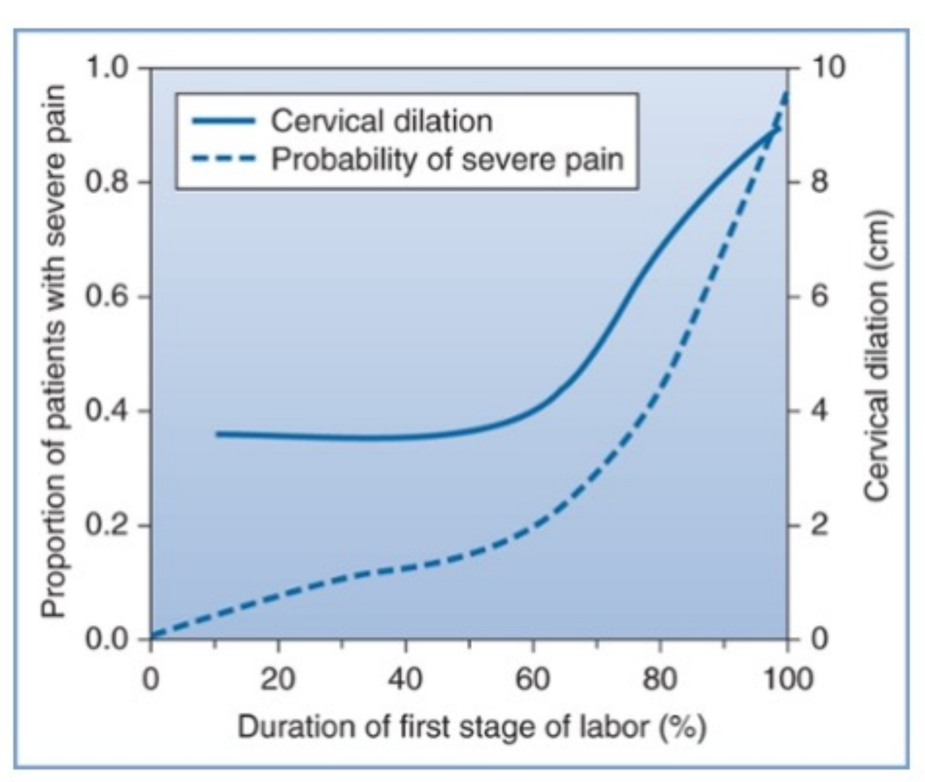
Th 10-L1

Utdrivningsskede:

Afferenta A-deltafibrer. Somatisk smärta

S2-S4





- Smärtintensiteten ökar i takt med att cervix dilateras

Förlossningssmärta har en rad väldokumenterade potentiellt negativa effekter på fysiologin hos den födande och fostret [6, 7].

Den kvinna som vill ha smärtlindring skall få smärtlindring

IDEAL FÖRLOSSNINGSANALGESI

- Säker för mor och barn
- Påverkar ej förlossningsförlopp
- Smärtlindrar över tid
- Få/inga biverkningar
- Lättarbetad

ICKE-FARMAKOLOGISK SMÄRTLINDRING

Viss evidens

- Mental förberedelse- utbildning. ”Coping”.
- Stödperson
- Bad
- Upprätt position
- Akupunktur

Ingen evidens

- Sterila kvaddlar
- TENS
- Massage
- Hypnos
- Aromaterapi

OPIOIDER

- Lätt att använda
- Billigt
- Kräver inte utbildad personal eller dyr utrustning
- Tradition

OPIOID GIVET SOM INTERMITTENT BOLUS

- Hög frekvens av biverkningar
- Passerar placenta – ökad risk för neonatal andningsdepression
- Dålig smärtlindring under förlossning

OPIOID-PCA UNDER FÖRLOSSNING

- Lägre doser krävs för att uppnå effekt
- Mindre risk för andningsdepression hos mor jmf med intermittent bolus
- Lägre dos > mindre mängd passerar placenta
- Lägre frekvens av illamående och kräkningar
- Ökad patientnöjdhet

REMIFENTANIL-PCA

- Låg fettlöslighet
- Liten distributionsvolym
- Snabbt tillslag (20-30 s, peak 90 s)
- Inga aktiva metaboliter

Ideal drog?

Kan vara ett alternativ om regional anestesi inte finns att tillgå eller är kontraindicerad

THE LANCET

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Articles

Intravenous remifentanil patient-controlled analgesia versus intramuscular pethidine for pain relief in labour (RESPITE): an open-label, multicentre, randomised controlled trial

Matthew J A Wilson MD [a], Prof Christine MacArthur PhD [b], Catherine A Hewitt MSc [b], Kelly Handley PhD [b], Prof Fang Gao MD [c], Leanne Beeson BSc [b], Prof Jane Daniels PhD [d] on behalf of the RESPITE Trial Collaborative Group †

Remifentanil vs övriga opioder

- Bättre smärtlindring
- Större patientnöjdhet

BMJ. 2015; 350: h846. PMCID: PMC4353278
Published online 2015 Feb 23. doi: 10.1136/bmj.h846 PMID: 25713015

Patient controlled analgesia with remifentanil versus epidural analgesia in labour: randomised multicentre equivalence trial

Liv M Freeman, gynaecologist,[1] Kitty W Bloemenkamp, gynaecologist,[1] Maureen T Franssen, gynaecologist,[2] Dimitri N Papatsonis, gynaecologist,[3] Petra J Hajenius, gynaecologist,[4] Markus W Hollmann, professor of anaesthesiology,[5] Mallory D Woiski, gynaecologist,[6] Martina Porath, gynaecologist,[7] Hans J van den Berg, anaesthesiologist,[8] Erik van Beek, gynaecologist,[9] Odette W H M Borchert, anaesthesiologist,[10] Nico Schuitemaker, gynaecologist,[11] J Marko Sikkema, gynaecologist,[12] A H M Kuipers, anaesthesiologist,[13] Sabine L M Logtenberg, midwife/PhD candidate,[14] Paulien C M van der Salm, gynaecologist,[15] Katrien Oude Rengerink, epidemiologist,[4] Enrico Lopriore, neonatologist,[16] M Elske van den Akker-van Marle, assistant professor of health economics,[17] Saskia le Cessie, associate professor of medical statistics,[18] Jan M van Lith, professor of obstetrics,[1] Michel M Struys, professor of anaesthesiology,[19] Ben Willem J Mol, professor of obstetrics,[20] Albert Dahan, professor of anaesthesiology,[21] and Johanna M Middeldorp, gynaecologist[1]

Conclusion In women in labour, patient controlled analgesia with remifentanil is not equivalent to epidural analgesia with respect to scores on satisfaction with pain relief. Satisfaction with pain relief was significantly higher in women who were allocated to and received epidural analgesia.

Remifentanil vs EDA

- EDA ger bättre smärtlindring
- Patientnöjdhet många gånger lika hög

Remifentanil for labor analgesia: an evidence-based narrative review

M. Van de Velde and B. Carvalho

International Journal of Obstetric Anesthesia, 2016-02-01, Volume 25, Pages 66-74, Copyright © 2015 Elsevier Ltd

Highlights

- Remifentanil patient-controlled intravenous analgesia is increasingly used for pain relief in labor.
- Remifentanil provides inferior pain relief when compared to neuraxial analgesia.
- Remifentanil can produce respiratory depression in parturients.
- Remifentanil should only be used with appropriate safety precautions.

PROBLEM

- Säker dos?
- Timing med värkar
- Risk för andningsdepression
- Personalfråga. Kräver 1:1 vård

INHALATIONSANESTESI

LUSTGAS:

- Ger smärtlindring..
- ..men sämre än EDA
- Hög patientnöjdhet
- Ingen påverkan på foster
- Säkert
- Miljöpåverkan

SEVOFLURAN:

Studier pågår. Ger smärtlindring men hög frekvens av amnesi. Begränsningar i form av utrustning, miljöpåverkan.

REGIONAL ANESTESI

- EDA
- CSE – combined spinal epidural
- DPE – dural puncture epidural
- Förlossningsspinal

EDA

- Välbeprövat
- Bra evidens
- God smärtlindring.
- Hög patientnöjdhet (och partner/medföljare)

EDA

Indikation:

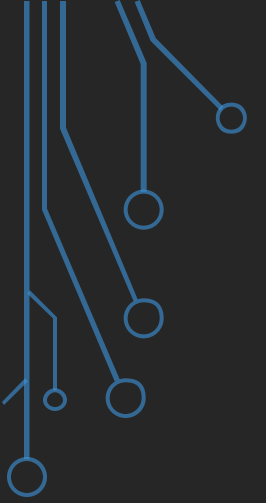
- Kvinna som önskar smärtlindring
- Gravida där GA är kontraindicerat eller bör undvikas (obesa, svår luftväg, komorbiditet tex PE eller hjärtsjd)

Kontraindikationer:

- Patientvägran eller samarbetssvårigheter (språkförbistring)
- Hypovolemi
- Koagulationsrubbning
- Infektion vid instickställe

PATIENTFALL

- Barnmorska ringer 00.30 och önskar en EDA till en förstföderska öppen 3 cm. Frisk, normal graviditet pratar inte mkt svenska. ”vi vill starta oxytocin efter EDA”
- Patienten kraftigt smärtpåverkad. Förstår ingen svenska. Maken tolkar. Många frågor om förlamning, risk för kejsarsnitt och annat..
- Kontraindicerat pga språkförbistring? Barnmorska missnöjd och säger att förlossningen inte kan fortsätta utan EDA
- EDA läggs



PATIENTFALL

- 01.45 kontroll om EDA funkar
- Mamma smärtfri
- Pratar god svenska

ÖNSKAN OM EDA, TILLSE ATT:

- Rutin finns
- Få kort anamnes
- Fri venväg finns
- Utgångsbltr taget
- Öppningsgrad?

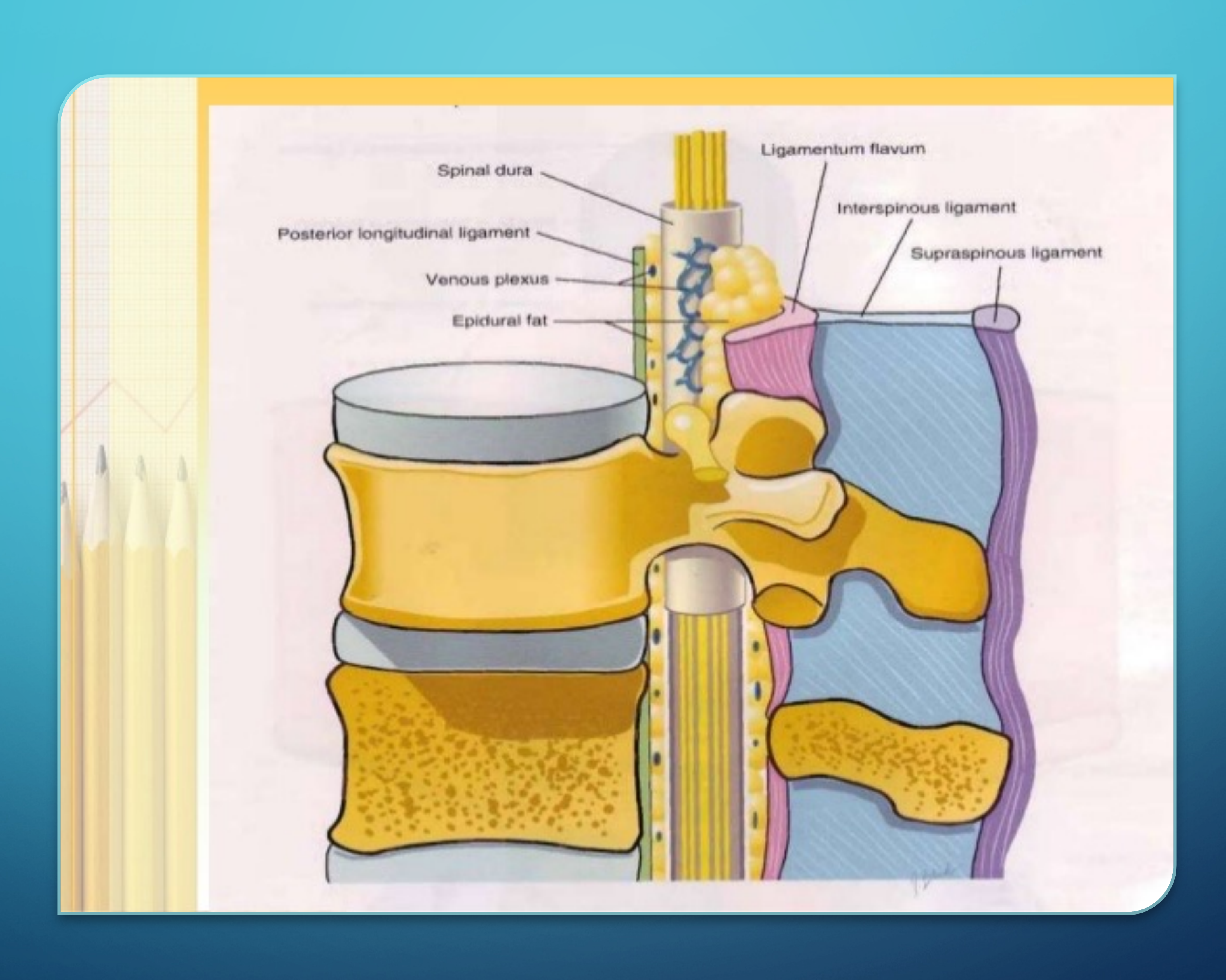
Review > Cochrane Database Syst Rev. 2014 Oct 9;(10):CD007238.
doi: 10.1002/14651858.CD007238.pub2.

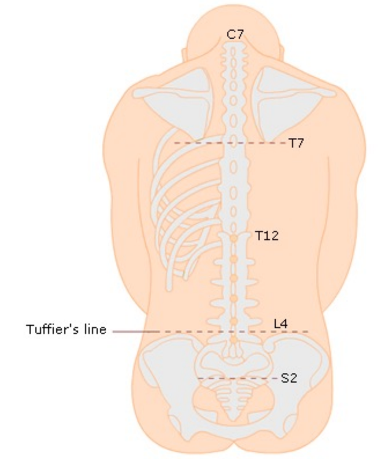
Early versus late initiation of epidural analgesia for labour

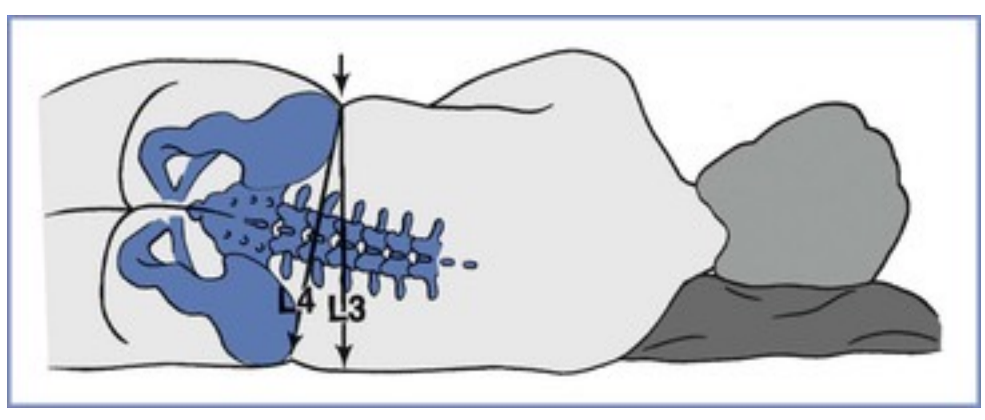
Ban Leong Sng [1], Wan Ling Leong, Yanzhi Zeng, Fahad Javaid Siddiqui, Pryseley N Assam, Yvonne Lim, Edwin S Y Chan, Alex T Sia

Affiliations + expand
PMID: 25300169 DOI: 10.1002/14651858.CD007238.pub2

Authors' conclusions: There is predominantly high-quality evidence that early or late initiation of epidural analgesia for labour have similar effects on all measured outcomes. However, various forms of alternative pain relief were given to women who were allocated to delayed epidurals to cover that period of delay, so that is it hard to assess the outcomes clearly. We conclude that for first time mothers in labour who request epidurals for pain relief, it would appear that the time to initiate epidural analgesia is dependent upon women's requests.


Ligamentum flavum
Spinal dura
Interspinous ligament
Posterior longitudinal ligament
Supraspinous ligament
Venous plexus
Epidural fat



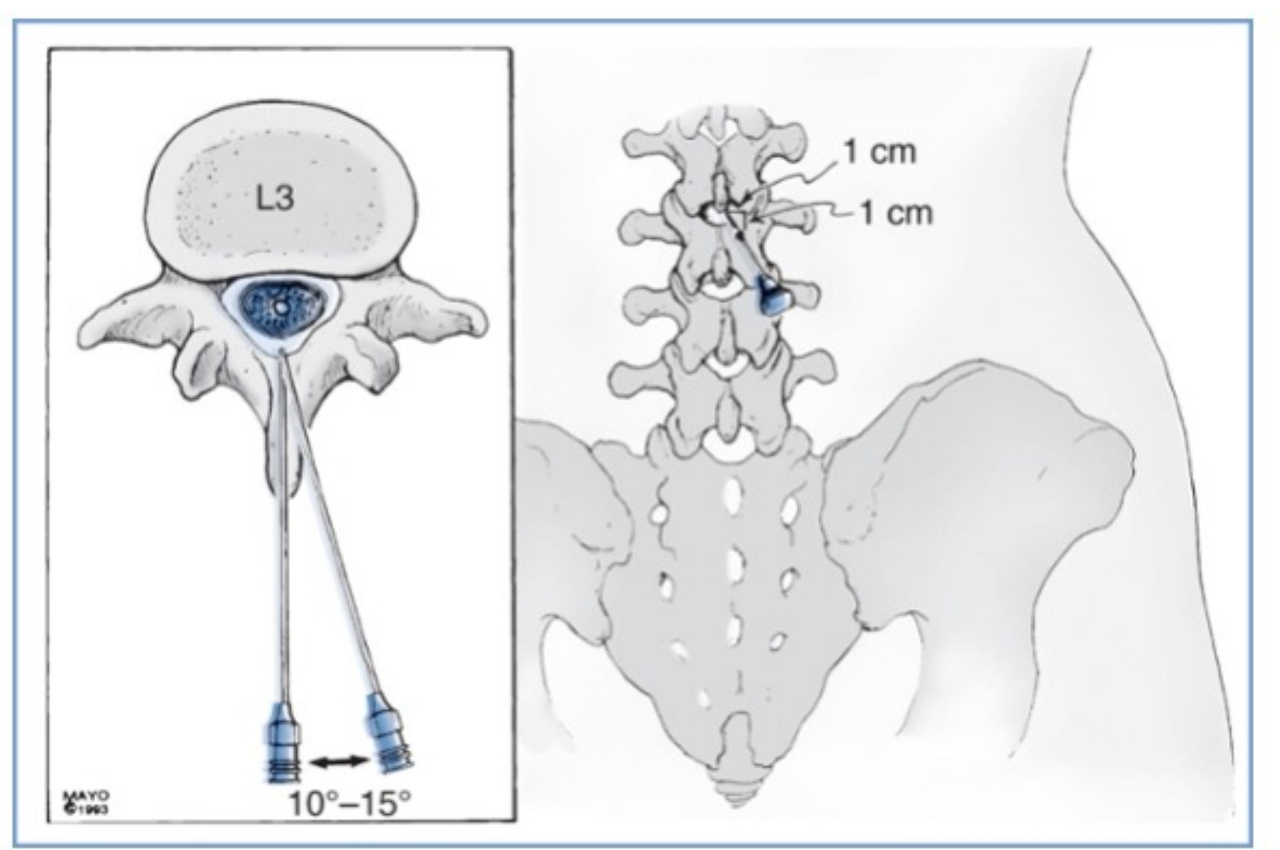


POSITION

- Sittande
- Liggande

NIVÅ

- L2/L3 i första hand
- L3/L4, L1/L2



TEKNIK

- Median
- Paramedian

Bli bra på en, gör dig bekväm med båda

	ESTIMATED DISTANCE (CM)			
BMI (kg/m^2)	White (*n* = 708)	Asian/British Asian (*n* = 24)	Black/British Black (*n* = 127)	Chinese (*n* = 126)
20	4.7	4.5	5.0	4.4
25	5.3	5.1	5.7	4.7
30	6.0	5.7	6.5	5.1
35	6.6	6.2	7.2	5.4
40	7.2	6.8	8.0	5.7

Estimated distance from skin to lumbar epidural space after adjusting for body mass index (BMI) and race.

LOR

- NaCl
- Hängande droppe
- Luft

Obstetric Anesthesia
Section Editor
Richard J. Palahniuk

The Optimal Distance That a Multiorifice Epidural Catheter Should Be Threaded into the Epidural Space

Yaakov Beilin, MD, Howard H. Bernstein, MD, and Barbara Zucker-Pinchoff, MD

The Departments of Anesthesiology and Obstetrics, Gynecology and Reproductive Sciences, Mount Sinai School of Medicine, New York, New York

Complications can occur during epidural placement for women in labor. As many as 23% of epidural anesthetics may not provide satisfactory analgesia. The cause of this may be technical. This study was undertaken to determine the optimal distance that a multiorifice catheter should be threaded into the epidural space to maximize analgesia and minimize complications. One hundred women in labor were enrolled in this prospective, randomized, and double-blind study. Patients were randomly assigned to have the epidural catheter threaded 3, 5, or 7 cm into the epidural space. After placement of the catheter and administration of a test dose with 3 mL of 0.25% bupivacaine, an additional 10 mL of 0.25% bupivacaine was administered in two divided doses. Fifteen minutes later, the adequacy of the analgesia was assessed by a blinded observer. We found that catheter insertion to a depth of 7 cm was associated with the highest rate of insertion complications while insertion to a depth of 5 cm was associated with the highest incidence of satisfactory analgesia. For women in labor who require continuous lumbar epidural anesthesia, we recommend threading a multiorifice epidural catheter 5 cm into the epidural space.

(Anesth Analg 1995;81:301–4)

KATETERLÄGE?

Intravasalt?

- Aspirera, hög sensitivitet med flerhålskateter om intravasalt
- Shahs test
- Testdos med adrenalin?

Intrathekalt?

- Testdos: ex Lidocain 30-40 mg alt första bolusdos i EDA
- CSF i kateter. Ev glukossticka
- Motorblockad
- Hypotoni
- Känsel yttersida fot – S1

DURAPUNKTION

Vad göra?

- Backa nålen, trä kateter?
- Lägga om på annan nivå?
- Lägga in en spinal kateter?

DURAPUNTION

Insertion of an intrathecal catheter in parturients reduces the risk of post-dural puncture headache: A retrospective study and meta-analysis

Jiali Deng[1], Lizhong Wang[1], Yinfa Zhang[1], Xiangyang Chang[1], Xingjie Ma[2]*

1 Department of Anesthesia, Jiaxing Maternity and Child Health Hospital, School of Medicine, Jiaxing University, Jiaxing, Zhejiang, China, 2 Department of Cardiothoracic Surgery, First Hospital of Jiaxing, School of Medicine, Jiaxing University, Jiaxing, Zhejiang, China

ORIGINAL ARTICLE

ELSEVIER
www.obstetanesthesia.com

Insertion of an intrathecal catheter following a recognised accidental dural puncture reduces the need for an epidural blood patch in parturients: an Australian retrospective study

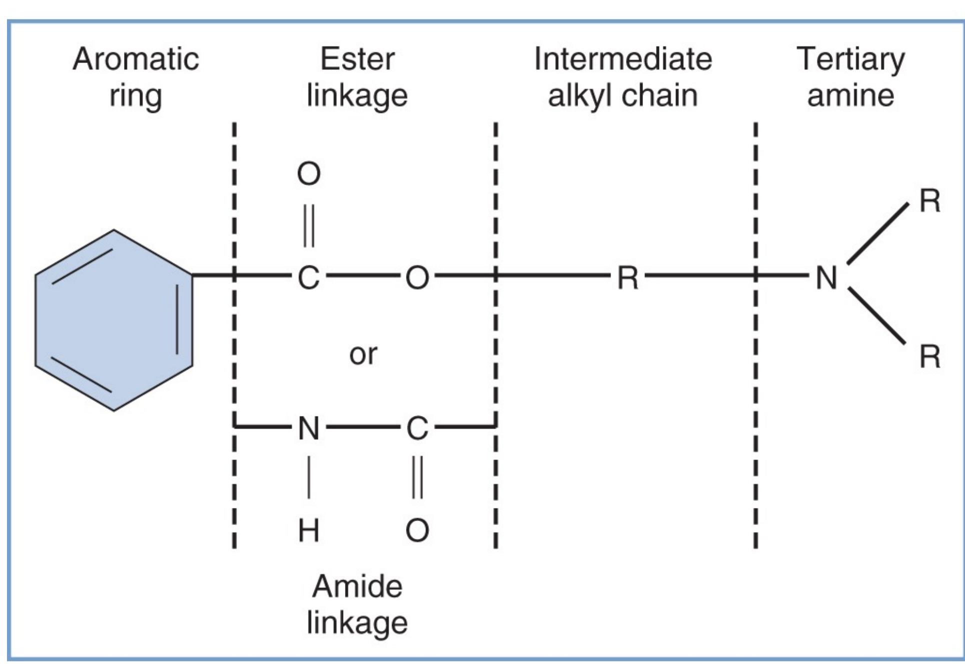
K. Rana,[a] S. Jenkins,[b] M. Rana[a,b]

[a] *Medical School, The University of Adelaide, Australia*
[b] *Department of Anaesthesia, Lyell McEwin Hospital, Haydown Rd, Elizabeth Vale, South Australia, Australia*

DURAPUNKTION

Om intrathekal kateter

- Riktlinje/rutin skall finnas
- Kateter, pump och rum skall märkas
- Obstetriker och barnmorska skall informeras



LÄKEMEDEL

Långverkande LA av amidtyp

- Bupivacain
- Ropivacain
- Levobupivacain

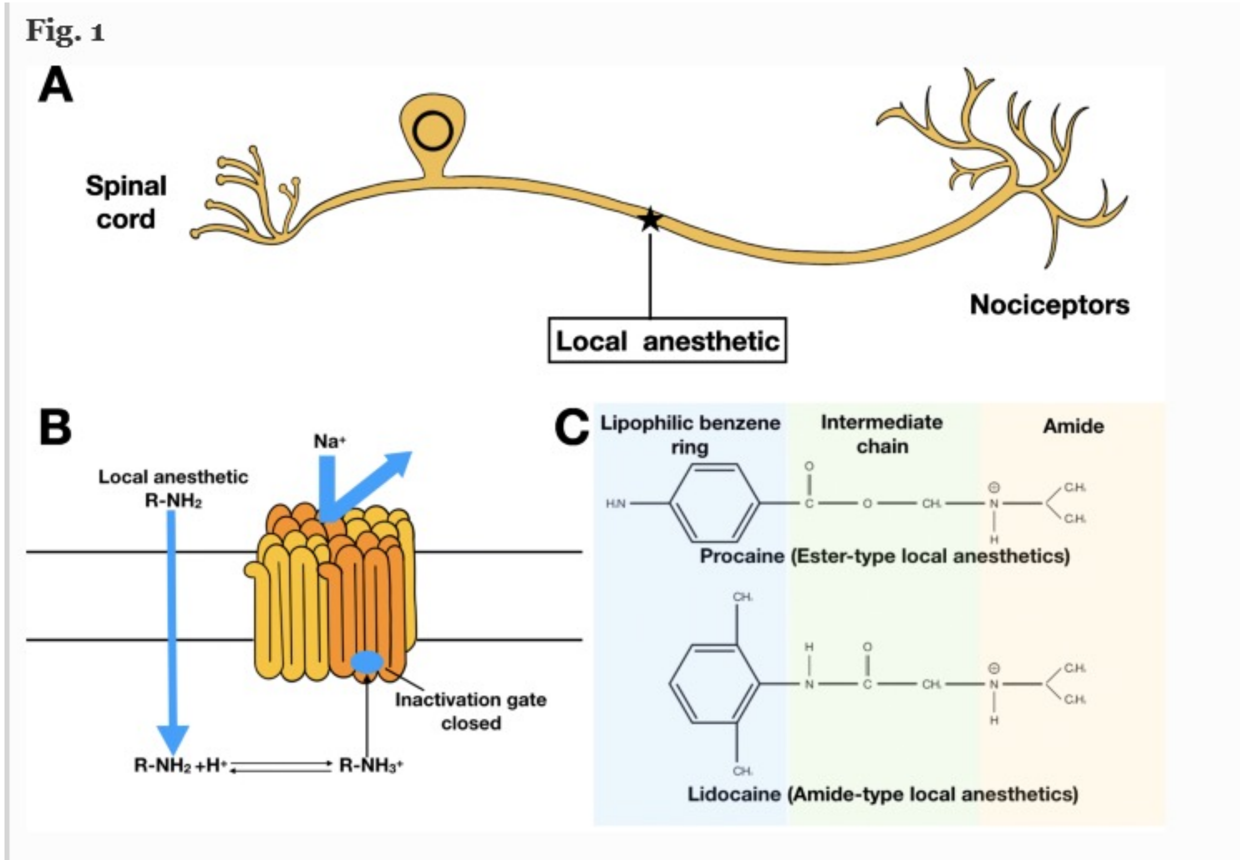


Fig. 1

Functional and Structural Properties of LAs. **a**, **b** Demonstration of how LAs interact with voltage-gated sodium channel on neuron. **c** Typical structures of ester and amide LAs

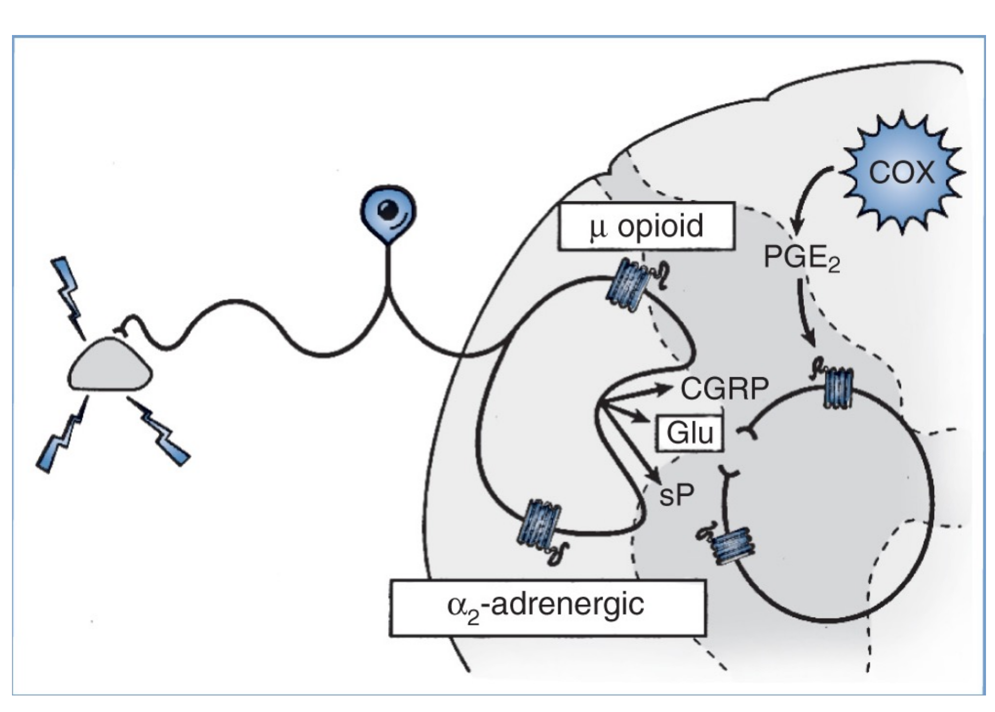
VERKNINGSMEKANISM

DOS?

Eftersträva alltid så låg dos som möjligt

MLAC – Minimal Local Anesthetic Concentration

- MLAC lägre hos gravida varför epidurala och intrathekala doser bör reduceras
- MLAC ökar under förlossningsförloppet
- MLAC minskar om tillägg av opioid (synergistisk effekt)



OPIOID

- Ger snabbare anslag
- Förlänger durationen
- Förbättrar analgesin

För bästa smärtlindring med så få biverkningar som möjligt:

Kombinera långverkande LA med opioid

Stor volym med låg koncentration

ADMINISTRATION

- Intermittent bolus
- Kontinuerlig infusion
- PCEA – patient controlled epidural anesthesia
- PCEA+ infusion
- PIEB – Programmed intermittent epidural bolus

FULL TEXT ARTICLE

Programmed intermittent epidural boluses for maintenance of labor analgesia: an impact study

C.P. McKenzie, B. Cobb, E.T. Riley and B. Carvalho

International Journal of Obstetric Anesthesia, 2016-05-01, Volume 26, Pages 32-38, Copyright © 2015 Elsevier Ltd

Highlights

- Labor analgesia with PIEB + PCEA vs. CEI + PCEA were compared retrospectively after implementation.
- We contrast findings to previous randomized controlled trials comparing PIEB to CEI.
- PIEB + PCEA reduced rescue clinical boluses while providing comparable analgesia.

BIVERKNINGAR

- Klåda
- Motorblockad
- Urinretention
- Hypotension
- PDPH

EDA:N FUNKAR INTE…

- Anamnes! Ingen smärtlindring alls? Halvsidigt anslag? Var sitter smärtan?
- Kontrollera katetern.
- Utbredning?
- Om PCEA, antal bolusar? Ge bolus
- Om halvsidigt anslag. Backa kateter om möjligt. Ge bolus.
- Sakral smärta. Partus?
- Uterusruptur??
- Om inget funkar. Lägg om.

CSE – COMBINED SPINAL EPIDURAL

Fördelar:

- Snabbare anslag
- Bättre sakral täckning
- Lägre doser LA medel behövs
- Högre frekvens av korrekt placerad EDA-kateter

Nackdelar:

- Pruritus vanligare
- Otestad EDA-kateter
- Högre frekvens av hyperton uterus

PATIENTFALL

- EDA önskas. Frisk förstföderska, normal graviditet. Induktion. Oxytocindropp pågår. Öppen 6 cm.
- Patienten mkt smärtpåverkad. Täta värkar, kan inte ligga still.
- Beslut om att lägga förlossningsspinal för att i senare skede kunna lägga EDA.
- Erhåller spinal med snabb och god effekt
- Hyperton uterus och sjunkande FHR

PATIENTFALL

- FHR hämtar sig inte
- Läggs på sidan
- Oxydropp pausas
- Får bricanyl och FHR stiger

Orsak:

Snabb, god smärtlindring minskar mängden cirkulerande katekolaminer. Adrenalin tokolytiskt via beta-adrenerga receptorer.

DPE- DURAL PUNCTURE EPIDURAL

- Som CSE men utan intrathekalt lm
- Snabbare anslag än EDA
- Bättre sakral täckning än EDA
- Mindre pruritus än CSE

Fler studier behövs

FÖRLOSSNINGSSPINAL

Indikation:

- Omföderska, förväntad snabb förlossning
- Öppen > 7 cm

Läkemedel:

Marcain Spinal 5 mg/ml 0.25 ml = 1.25 mg

Sufenta 5 ug/ml 1.5 ml = 7.5 ug

PÅVERKAR EDA

- Frekvens av instrumentella förlossningar?
- Frekvens kejsarsnitt?

Use of epidural analgesia and its relation to caesarean and instrumental deliveries—a population-based study of 94,217 primiparae

Susanne Ledin Eriksson[a,*], Petra Otterblad Olausson[b], Christina Olofsson[c]

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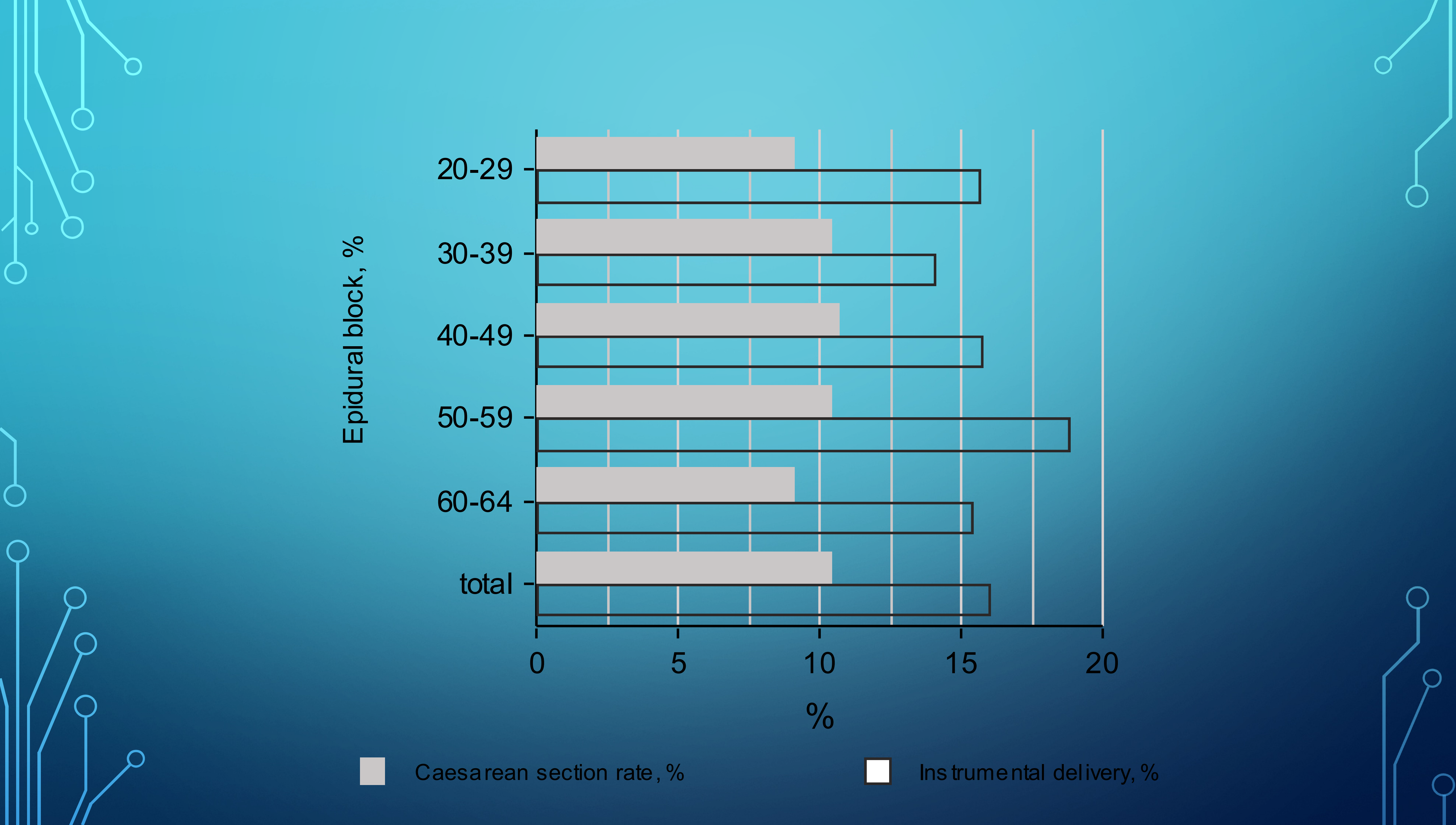
Epidural block, %
20-29
30-39
40-49
50-59
60-64
total
0
5
10
15
20
%
Caesarean section rate, %
Instrumental delivery, %

Contents lists available at ScienceDirect

International Journal of Gynecology and Obstetrics

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

CLINICAL ARTICLE

Impact of the introduction of neuraxial labor analgesia on mode of delivery at an urban maternity hospital in China

Ling-Qun Hu [a,1], Jin Zhang [b,1], Cynthia A. Wong [a,*], Qinying Cao [c], Guohua Zhang [d], Huijuan Rong [e], Xia Li [e], Robert J. McCarthy [a]

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Epidural analgesia
Forceps
Impact study
Labor analgesia
Neuraxial analgesia

ABSTRACT

Objective: To evaluate the association between the introduction of neuraxial (epidural) labor analgesia and mode of delivery in a large urban maternity hospital in China. *Methods:* A single-intervention impact study was conducted at Shijiazhuang Obstetrics and Gynecology Hospital in Shijiazhuang. Baseline data collection occurred between August 1 and December 31, 2009, when no analgesic method was routinely employed during labor. An intervention was then implemented, consisting of a neuraxial labor analgesia service. The service was fully operational from September 1, 2010, and data were collected to August 31, 2011. The mode of delivery was compared between the different periods. *Results:* Neuraxial analgesia rate was used in none of the 3787 deliveries during the baseline period and 3429 (33.5%) of 10 230 in the implementation period. Cesareans were performed in 1533 (40.5%) deliveries in the baseline period and 3441 (33.6%) in the implementation period (difference –6.8%, 99.8% confidence interval [CI] –9.7% to –3.9%; $P < 0.0017$). The proportion of vaginal deliveries in which forceps were used was unchanged (difference –0.8%, 99.8% CI –0.7% to 2.2%; $P = 0.92$). *Conclusion:* The introduction of epidural analgesia reduced the frequency of cesarean delivery, which improved obstetric and neonatal outcomes.

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Ling-Qun Hu [a,1], Jin Zhang [b,1], Cynthia A. Wong [a,*], Qinying Cao [c], Guohua Zhang [d], Huijuan Rong [e],

In conclusion, the introduction of epidural analgesia to a childbirth environment in which no analgesia was previously available was associated with a decrease in the overall cesarean delivery rate and a decrease in the rate of nonmedically indicated cesarean deliveries. Moreover, the introduction of epidural analgesia was associated with a decrease in the episiotomy rate, with no change in the rate of forceps-assisted vaginal delivery. The postpartum hemorrhage rate was unchanged and neonatal outcomes improved. Taken together, the introduction of epidural analgesia in the present setting improved labor and delivery outcomes compared with the use of nonpharmacological analgesia methods.

FRÅGOR?