Съезд Congress

5-7 сентября 2018 / Санкт-Петербург
September 5-7, 2018 / St. Petersburg

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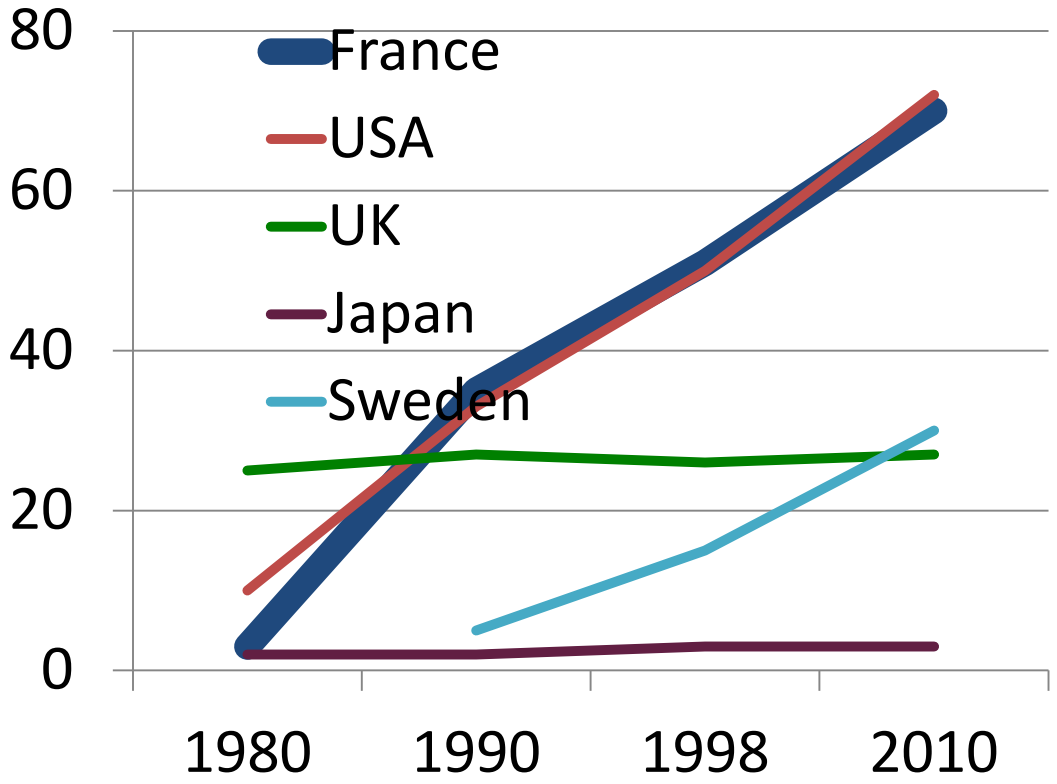
State of the art of regional anesthesia for labor pain relief

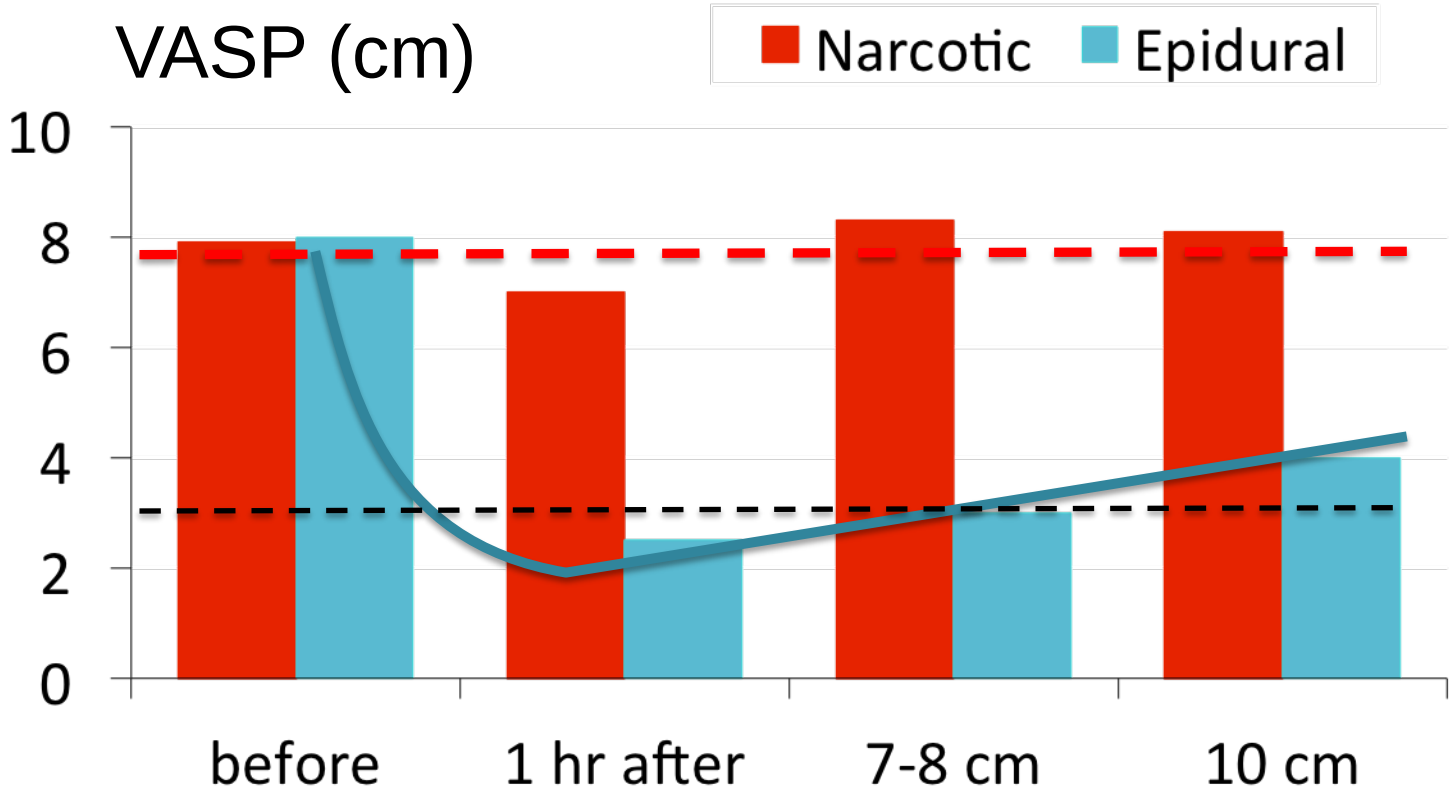
Regional anesthesia for painless labor: for whom?

Use of epidural for labor (%)



The effect of intrapartum epidural analgesia ...

Thorp JA et al, AJOG 1993,169:851-8



Regional anesthesia for labor: for whom?

- Factors associated with an **increased demand** rate
  - Age (teenage or oldest)
  - Technique known to be available
  - Secularity
  - High educational level
  - Technique recommended by the other healthcare providers (obstetricians, midwives)
  - Low parity
  - Culture
  - Cost
- Medias and information

- Factors associated with an **increased rate of epidural analgesia**
  - Technique available
  - Severity of pain
  - Not afraid by side effects
  - Cognitive control
  - Husband present and consenting

Pain and (dis)satisfaction

- Doing a technical procedure does not necessarily mean that it is well done and that the patient is satisfied
- Maternal satisfaction immediately after birth high if vaginal (natural) delivery has been possible and if the neonate is safe
- Factors of maternal satisfaction vary widely in the days, weeks and months after birth
- Satisfaction high when expectations are met

Women's experiences with neuraxial labor analgesia in the listening to mothers II survey. Attanasio L et al, Anesth Analg 2014

Topics spontaneously discussed (n= 300)	(%)
Epidural placement better moment of the labor experience	17
Analgesic efficacy	16
Inadequate « timing » - *Long duration of pain before epidural placement* - *Epidural placed too late (advanced cervical dilatation)* - *Epidural stopped in the second stage*	30
Negative experience related to: - *Epidural puncture and placement difficult and/or painful* - *Incomplete efficacy* - *Side effects unexpected (motor block)* - *Epidural requested during labor but undesired before labor*	54

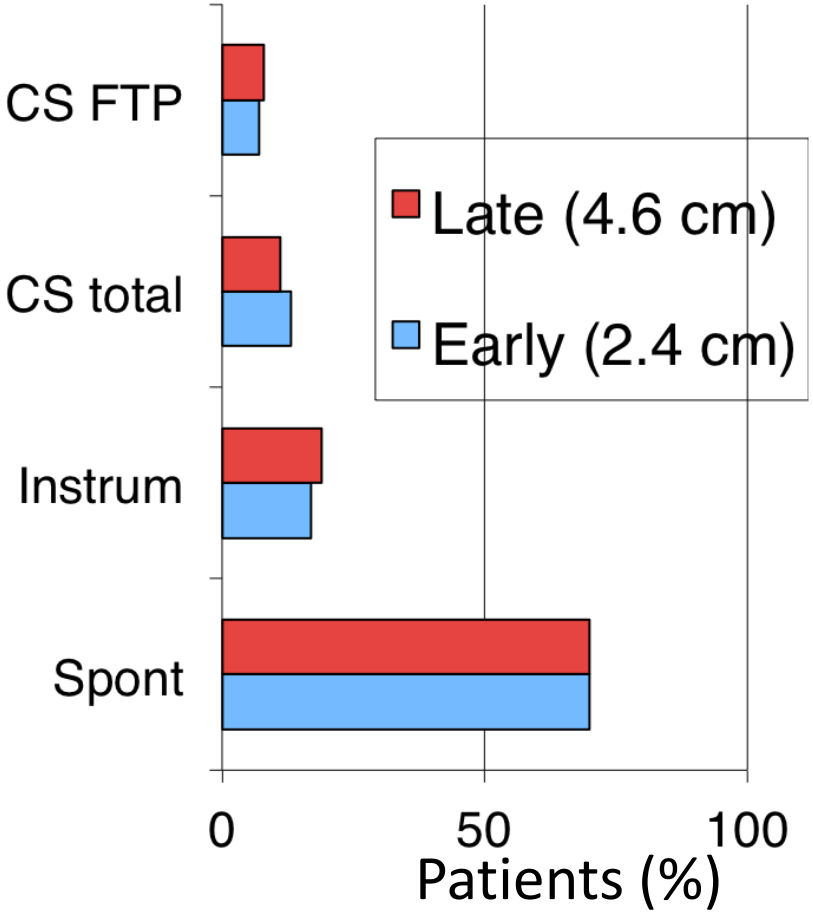
What is an effective epidural analgesia?

1. Do not hesitate to place the epidural early in labor

Early vs late initiation of epidural analgesia…

Ohel G et al, AJOG 2006;194:600-5

- 449 term nulliparas (with induction of labor in 1/3 of cases)
- Ropi 0.1 % + Fenta 2 µg/ml
- Management of labor according to the decision of the obstetrician



What is an effective epidural analgesia?

2. Improve the analgesic protocol and provide effective pain relief

Key role of lipophilic opioid added to LA

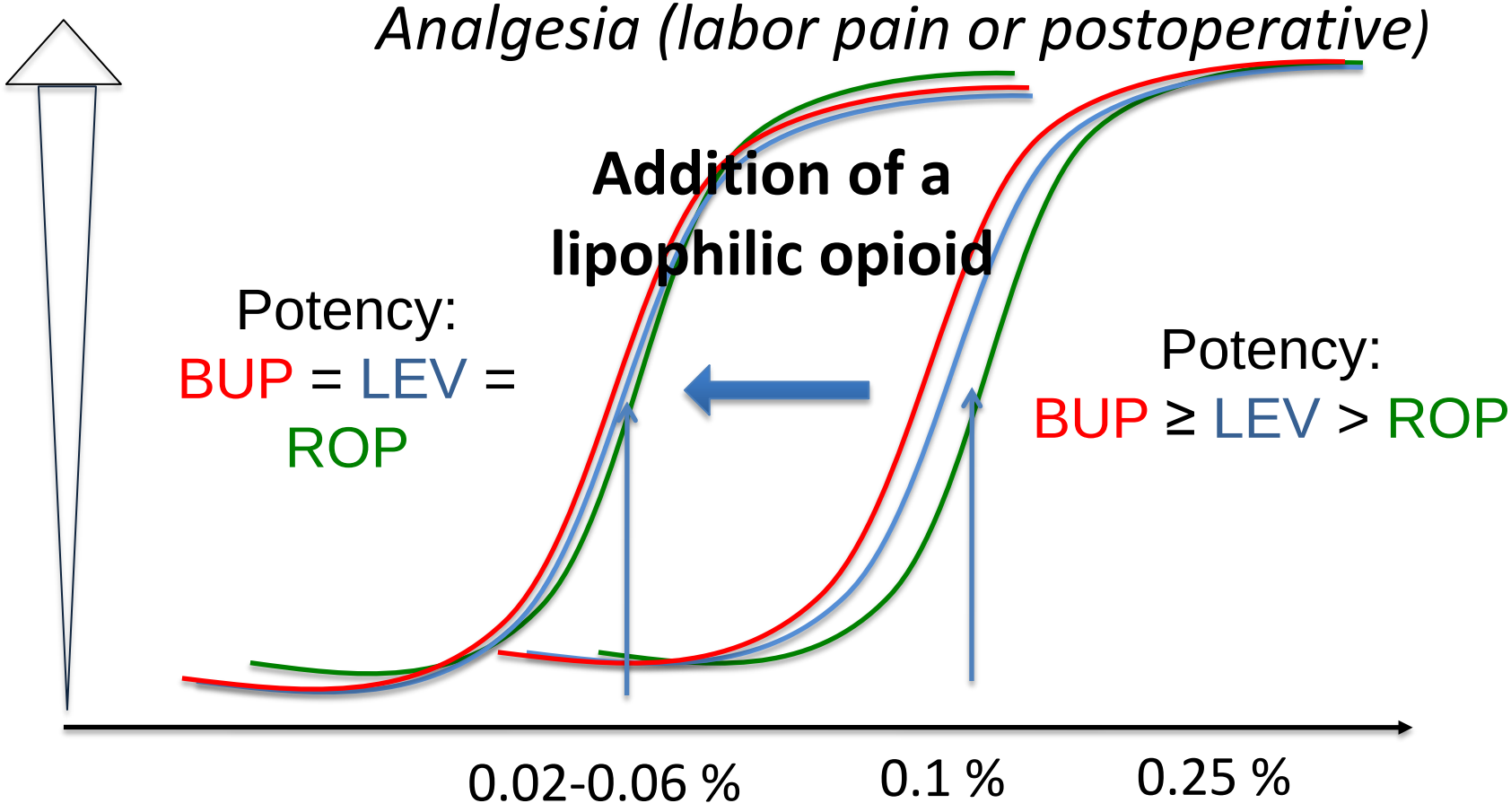
Vertommen, Anesthesiology, 1991

RCT 695 parturients
Bupivacaine 0.125
Bupivacaine 0.125% + sufentanil 10 µg

	Control (n = 347)	Sufentanil (n = 348)
Total bupivacaine dose (mg)	**42.2 ± 19.4**	**34.3 ± 17***
Sub-optimal analgesia (%)	**48.4**	**31.1***
No motor block before delivery (%)	42	63 *
Instrumental delivery primipara (%)	5	4*

Relative potency after epidural administration

Analgesia (labor pain or postoperative)

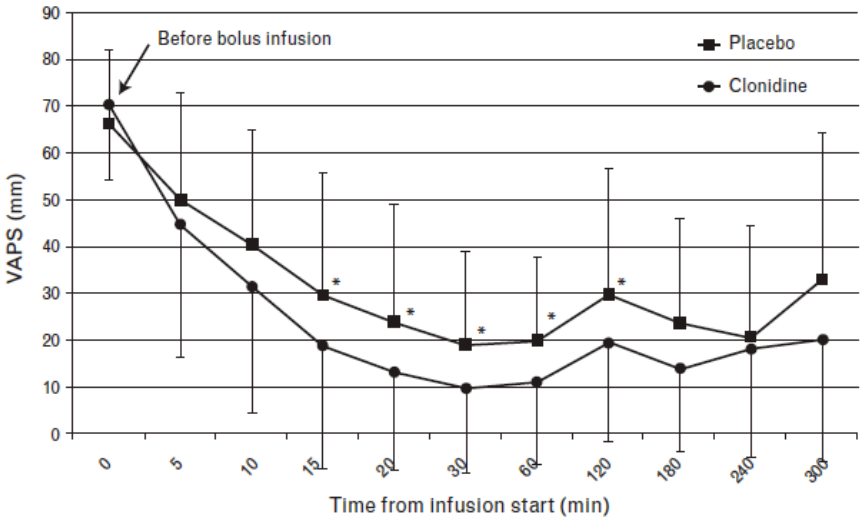


Effects of a continuous low-dose clonidine epidural regimen on pain, satisfaction and adverse events during labour: a randomized, double-blind, placebo-controlled trial

Florent Wallet, Henri Jacques Clement, Carine Bouret, Felix Lopez, Françoise Broisin, Corine Pignal, Mathieu Schoeffler, Edith Derre, Bruno Charpiat, Cyril Huissoud, Frédéric Aubrun and Jean Paul Viale

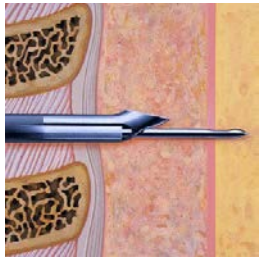
- n = 128, randomized
- Levobupi 0.625 $mg.mL^{-1}$ + sufentanil 0.25 $\mu g.mL^{-1}$
- With or w/o clonidine 2 $\mu g.mL^{-1}$

Clonidine
- Reduces the number of additional top-ups
- Reduces the pruritus rate
- No change in satisfactiion rate
- Is associated with a slightly greater decrease in BP



Eur J Anaesthesiol 2010;27:441–447

Combined - spinal - epidural analgesia for labor pain relief



Labor pain

No contra-indication to regional block

First stage - Latent phase

Primipara

Avoid motor block

Ambulation

Bup ≤ 2.5 mg
+Fentanyl 25 µg/Sufenta ≤ 5µg
+ clonidine 15-50 µg
or epinephrine ≤ 200 µg

Primipara/Multipara

Active phase of the 1st stage

2nd stage

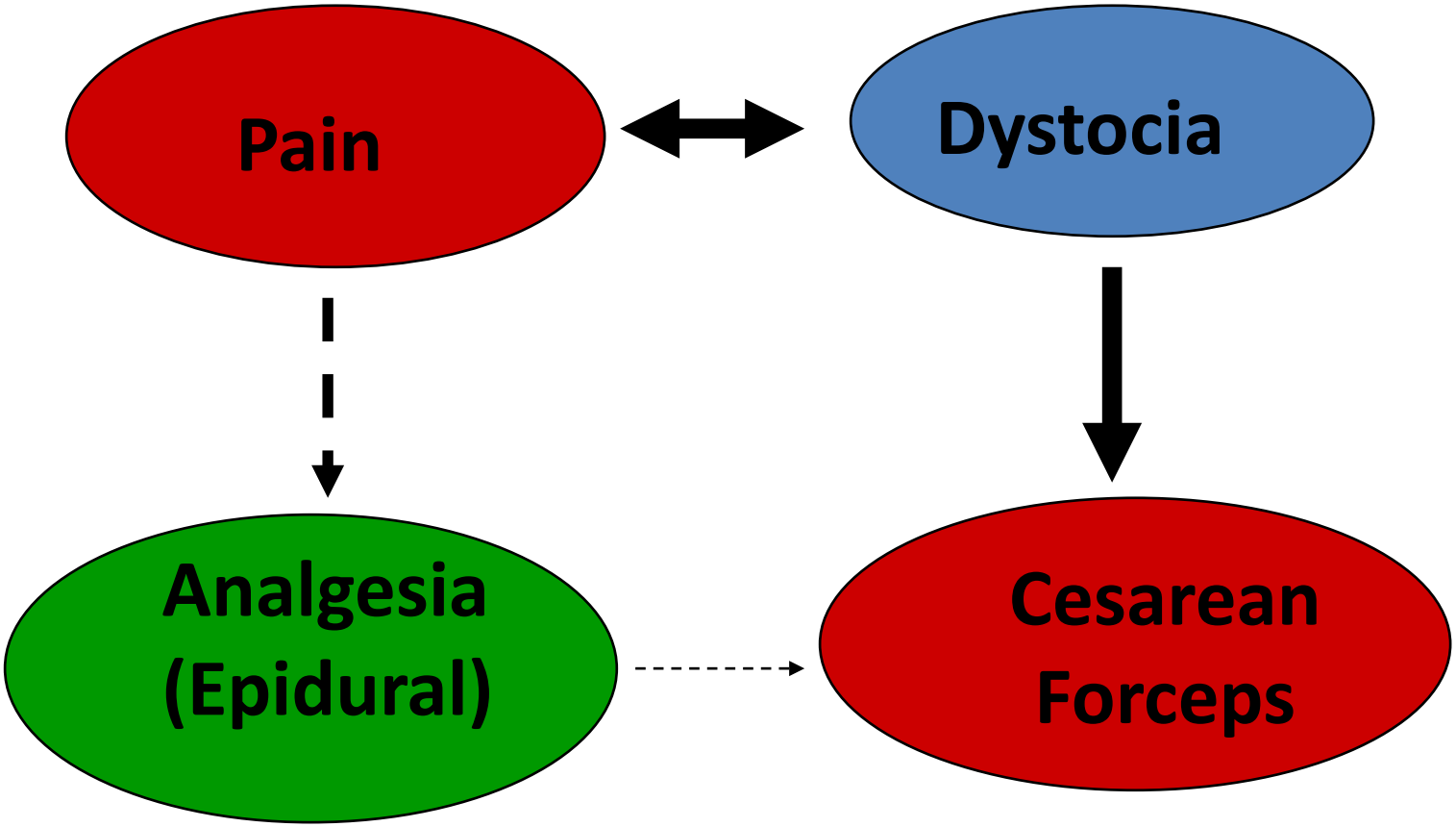
Motor block of no concern

Bup 2.5 mg +Fentanyl 25 µg
or Sufenta 5 µg

What is an effective epidural analgesia?

3. Reduce the rate and severity of motor block to improve obstetric outcomes

Pain and labor outcomes



- Motor block associated with an increased rate of cesarean and instrumental delivery and prolonged 2nd stage of labor
- Concentration of bupivacaine ≥ 0.125 % increases the rate and severity of motor block
- Strategies to reduce motor block and improve obstetric outcomes
  - Use a lower concentration of bupivacaine and/or ropivacaine or levobupivacaine
  - Use intermittent injections (when compared with continuous infusion)
  - PCEA associated with less dose used (reduced number of top ups) and less motor block when compared with continuous infusion
  - PIEB is associated with a slight but significant decrease in the need of local anesthetic, a reduced rate of instrumental delivery and a shortened duration of the 2nd stage of labor
  - CSE also associated with decreased motor block (± DPE)

Epidural analgesia compared with CSE-A during labor in nulliparous women

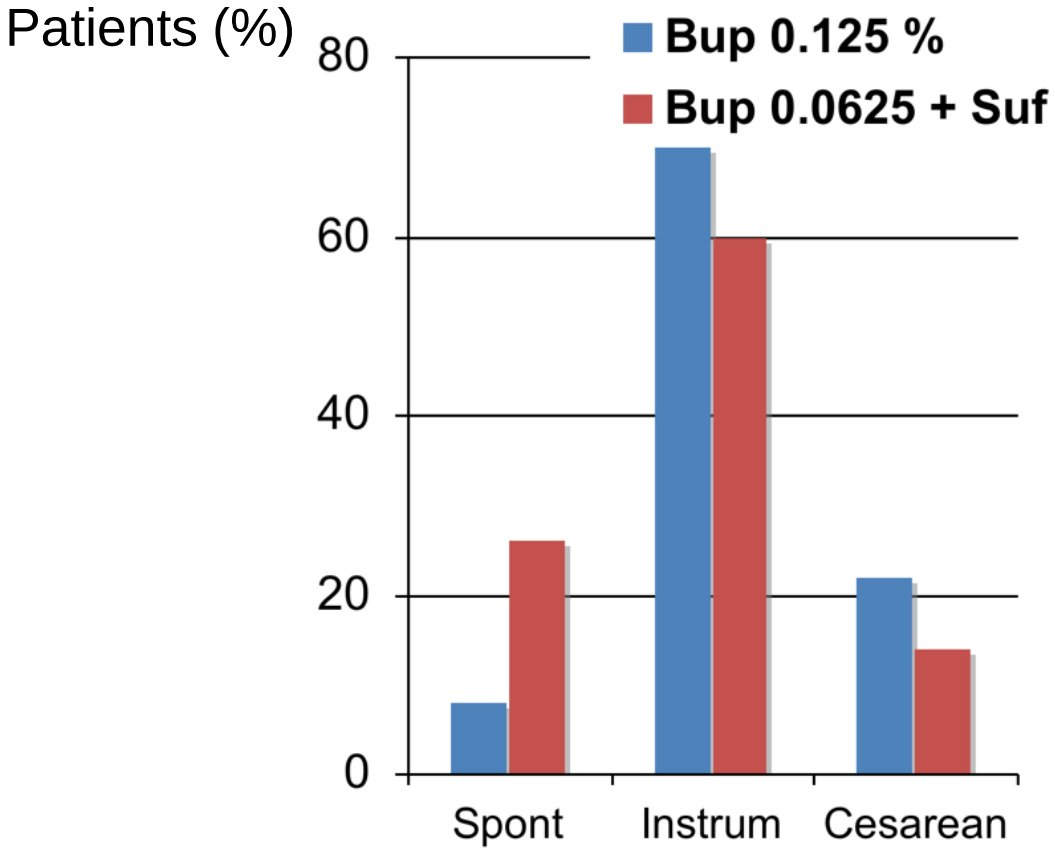
Nageotte MP et al. NEJM 1997; 337: 1715

	EA	CSE: A^-	CSE: A^+
C/S for dystocia	15%	16%	16%
Instrumental delivery	40%*	28%	33%
Apgar score < 7	2	2	1

Is there any concern remaining? Yes!

Epidural analgesia … in singleton breech presentation

Benhamou D et al, IJOA 2002;11:13-8



Protocol for « optimal » epidural analgesia during labor

- Use a low concentration of local anesthetic (≤ 0.1%) combined with a lipophilic opioid (sufentanil 0.25 µg/ml or fentanyl 2 µg/ml)
- Initiate EA early if the parturient wishes
- No test-dose with lidocaine and do not use of epinephrine-containing solution
- Seek minimal / no motor block, by avoiding top-ups with concentrated LA solutions, do not interrupt EA during 2nd stage of labor
- Prefer combination of the following techniques :
  - PCEA + automatic boluses (= PIEB) if this mode is available
  - Ropivacaine or levobupivacaine (± clonidine)
  - More controversial interest of : CSE/DPE, ambulation

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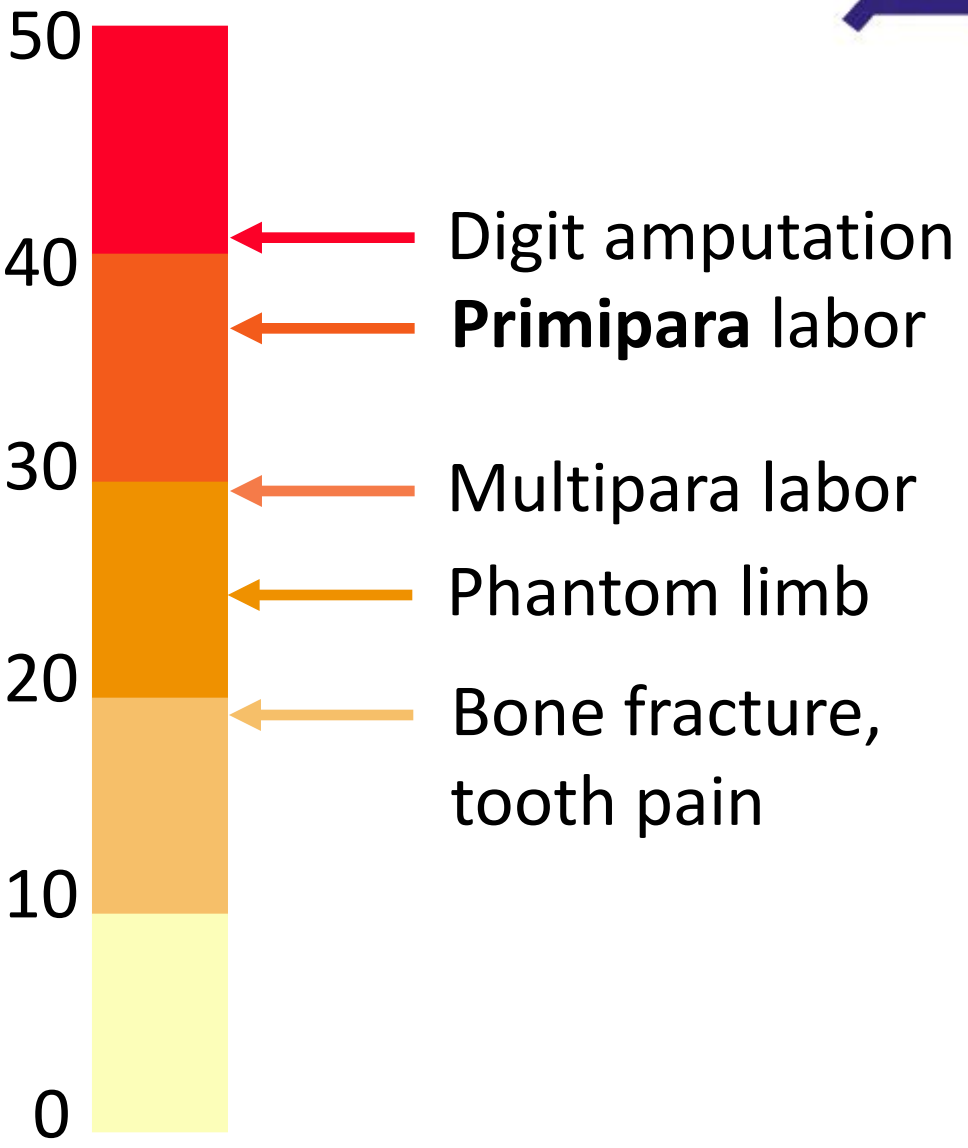
Epidural ra
France 80

Comparaison of pain scores
(Melzack, Pain 1993)



moderate pain: 1/3
severe pain : 2/3
unbearable pain : 20 %

Why women prefer epidural analgesia during childbirth?

Van den Bussche E et al, Eur J Pain 2007;11:275-82

- Theory of **planned behaviour**
- Positive or negative attitude in the face to pain
- Locus of control

- **Pain catastrophizing**
- Attitude dictated by the fear of feeling pain (hypervigilance) and that pain is useless
- Behavior centered on the feeling that there is no help to expect and the fear to loose control and experience distress
- Desire to enjoy the experience of labor and delivery

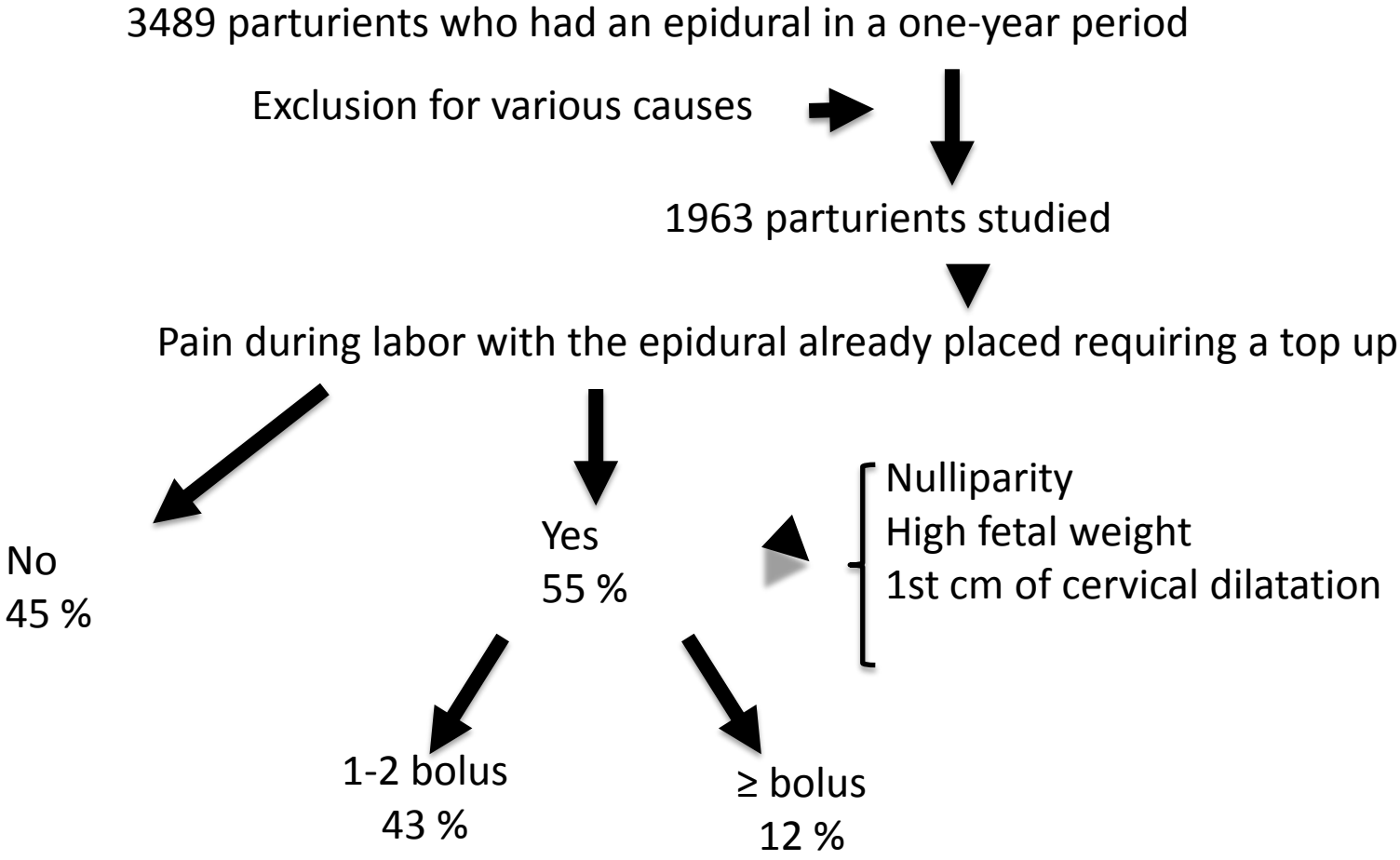
More in hope than expectations…

Lally JE et al, BMC Medicine 2008,6:7

- Systematic review of studies assessing expectations and experiences regarding pain during labor and delivery
- Women poorly informed about benefits and side effects of analgesic techniques
- Knowledge often anecdotal
- Women often underestimate pain which is going to occur during labor
- Preparation to labor often limited and poorly organized
- Women hope that labor will not be painful but appreciate the fact that pain might be necessary and would be useful
- Paradox between the preference of a “drug-free labor” and the expectation that labor will be painful and that they will ask fore pain relief
- Desire to participate in the choice of the strategy but the degree of involvement varies a lot

Predictors of breakthrough pain during labor epidural analgesia

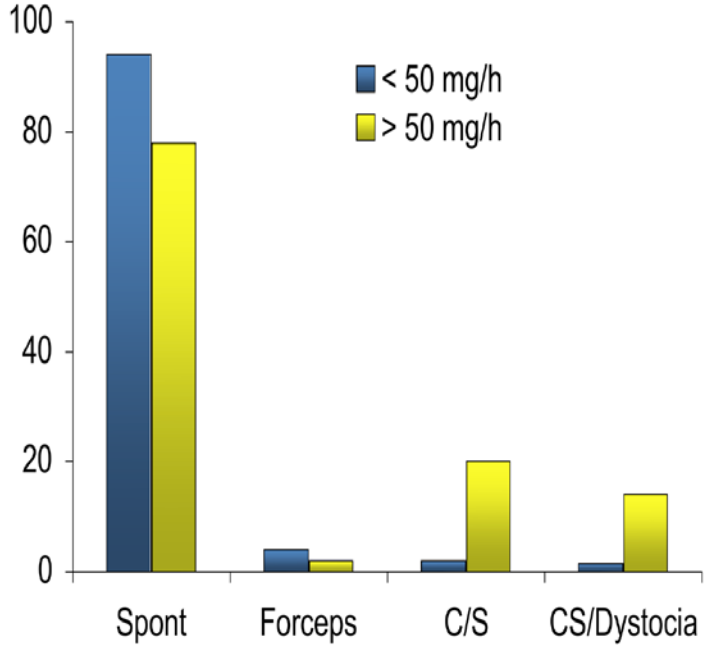
Hess PE et al, Anesth Analg 2001;93:414-8



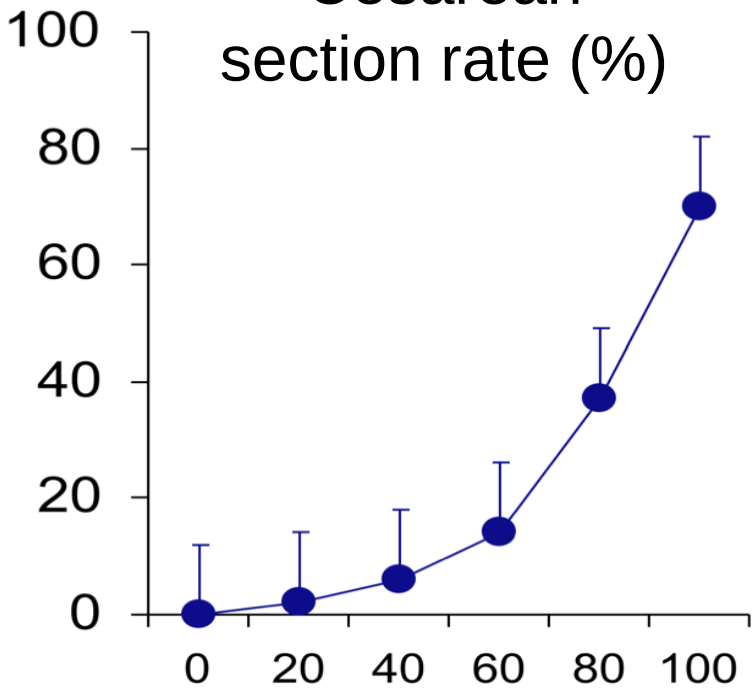
Intensity of labor pain and cesarean delivery

Alexander JM et al, Anesth Analg 2001,91:1524-8

Mode of delivery (%)



Cesarean section rate (%)

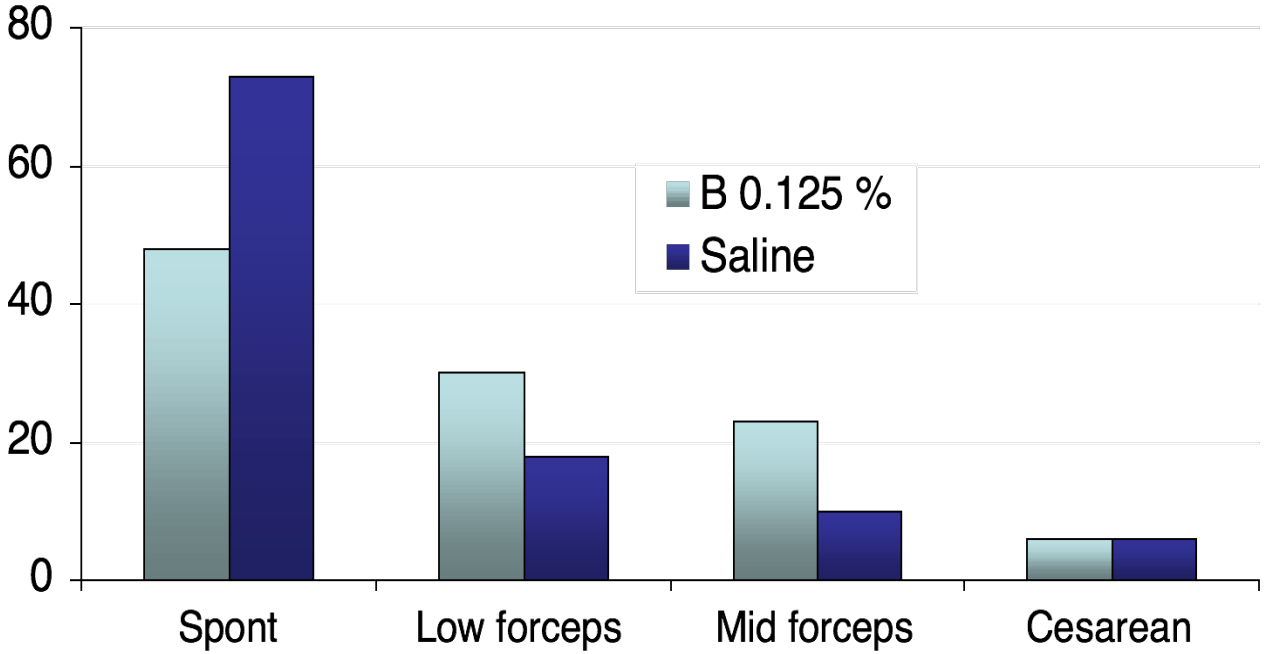


Pethidine dose (mg/h)

The influence of continuous epidural bupivacaine analgesia...

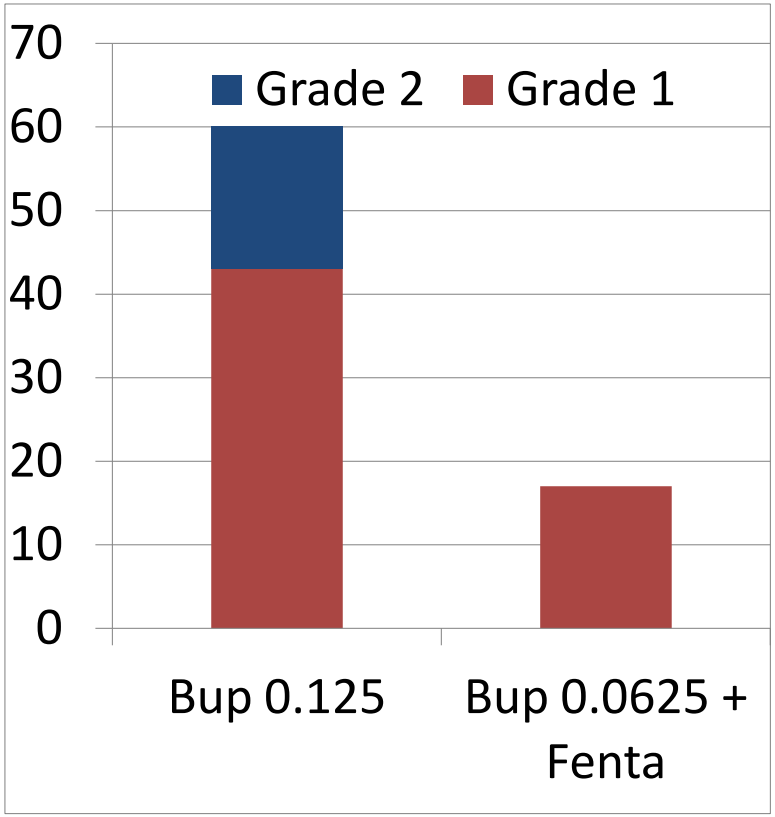
Chestnut DH et al, Anesthesiology 1987,66:774

Method of delivery (%)



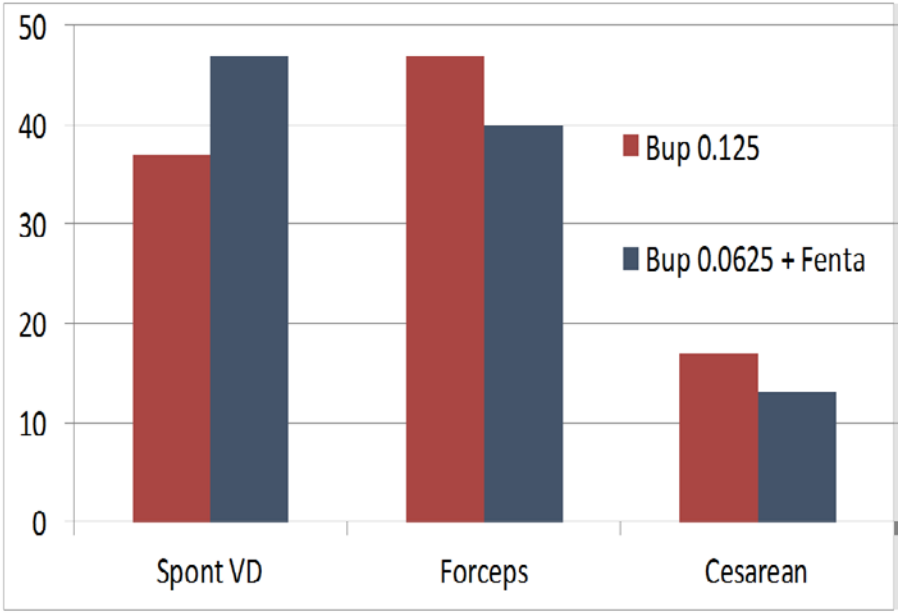
Duration of the 2nd stage:
124 ± 70 vs
94 ± 54 mn
($p < 0.05$)

Motor block during epidural infusions for nulliparous women in labour
Russell R et al, IJOA 1995;15:82-88



Motor block

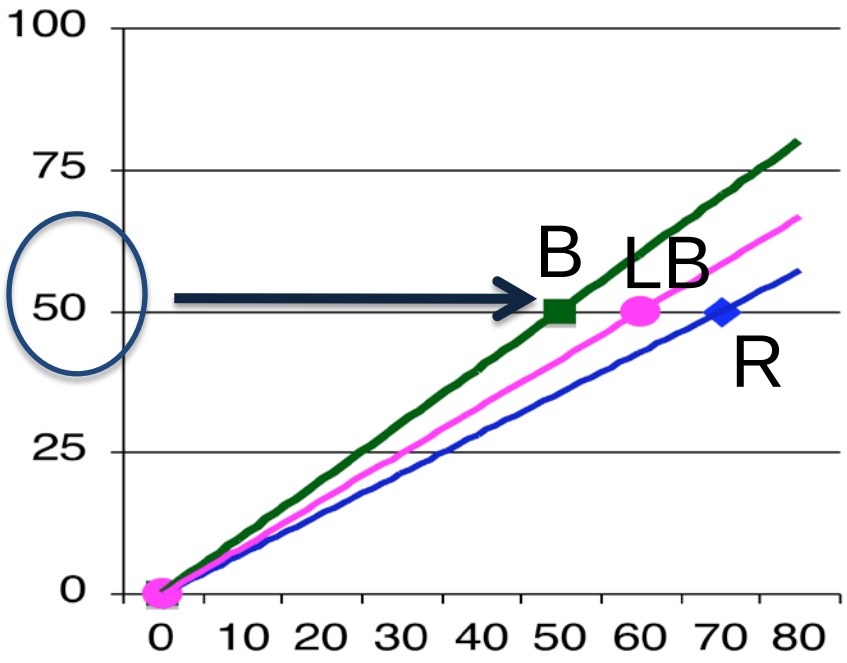
Patients (%)



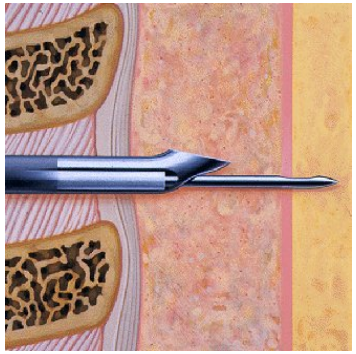
Mode of delivery

Motor block produced by local anesthetics

Dose associated with 50 % of patients having a motor block (EMMLAC)

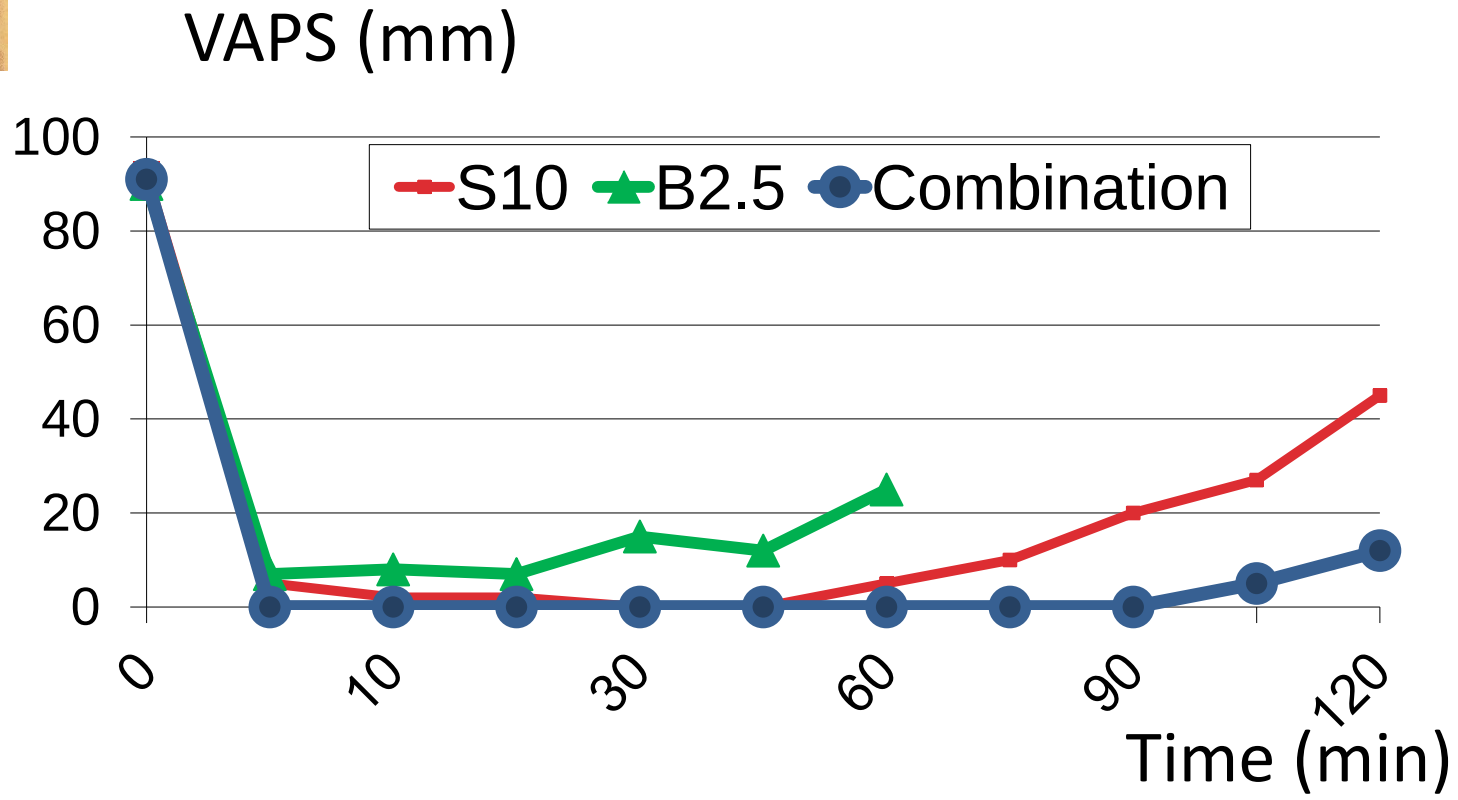


Lacassie H et al, A&A 2007

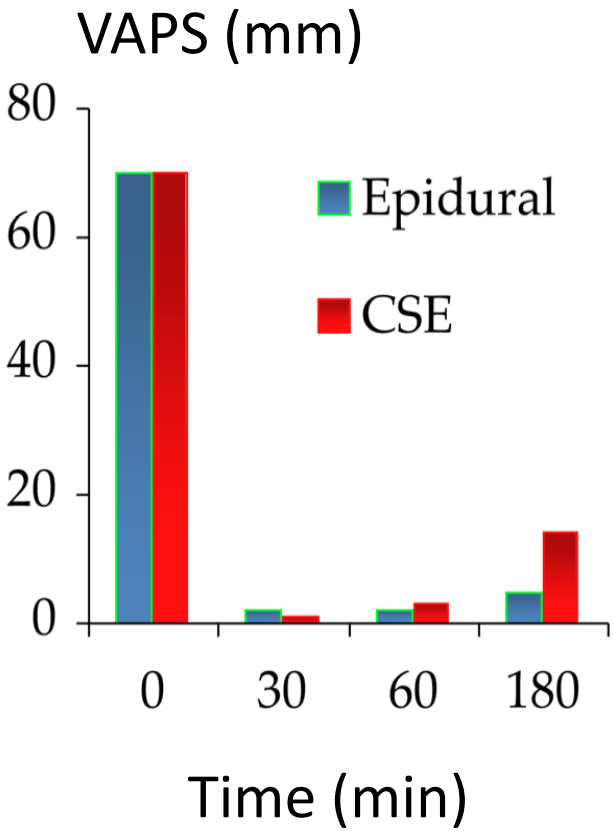


The addition of bupivacaine to intrathecal sufentanil ...

Campbell DC et al, Anesth Analg 1995,81:305



Regional analgesia in early labor: combined spinal vs epidural
Price C et al Anaesthesia 1998,53:951



	CSE n = 45	Epi n = 48
Time to 1st top-up (min)	89	111 *
Walking (%)	21	28
Pruritus (%)	25	26
Satisfaction (mm)	95	91

Rates of caesarean section and instrumental vaginal delivery in nulliparous women… systematic review
Liu EHC & Sia ATH. BMJ 2004;328(7453):1410

- When compared to pethidine, “modern” epidural analgesia (i.e. with low concentration of local anesthetic and a lipophilic opioid) :
  - Is associated with an increased incidence of fever (T° > 38 ° C) and hypotension
  - Does not increase the cesarean section rate
  - Increased duration of the 2nd stage: + 15.2 mn (2.1-28.2)
  - Increases the need for oxytocin augmentation OR: 1.75 (1.2-2.4)
  - Trend toward an increase in the rate of instrumental delivery OR: 2.11 (0.9 - 4.7; NS)

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