

LABOUR ANALGESIA AND RECENT ADVANCES







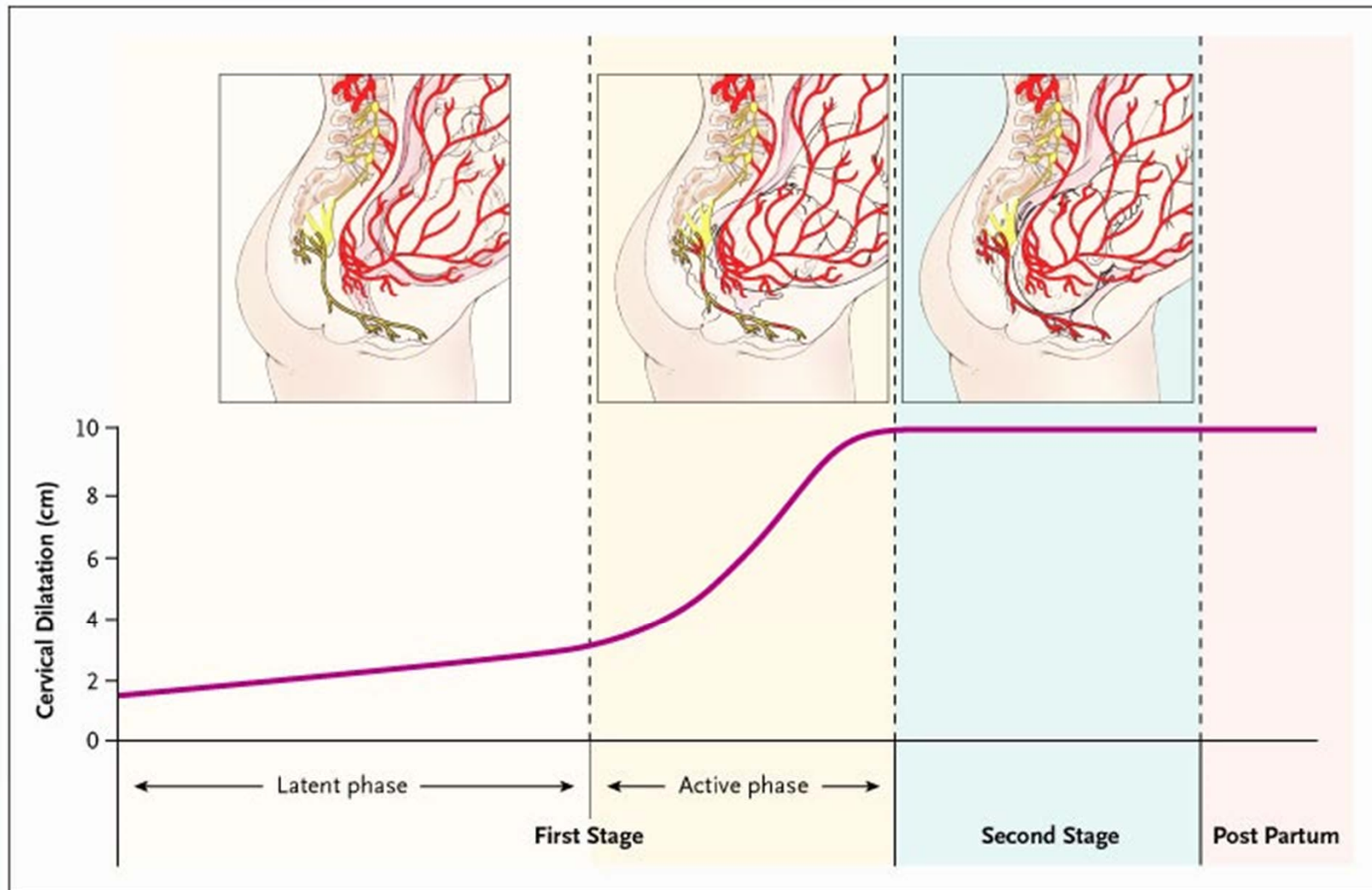








Stages of Labor



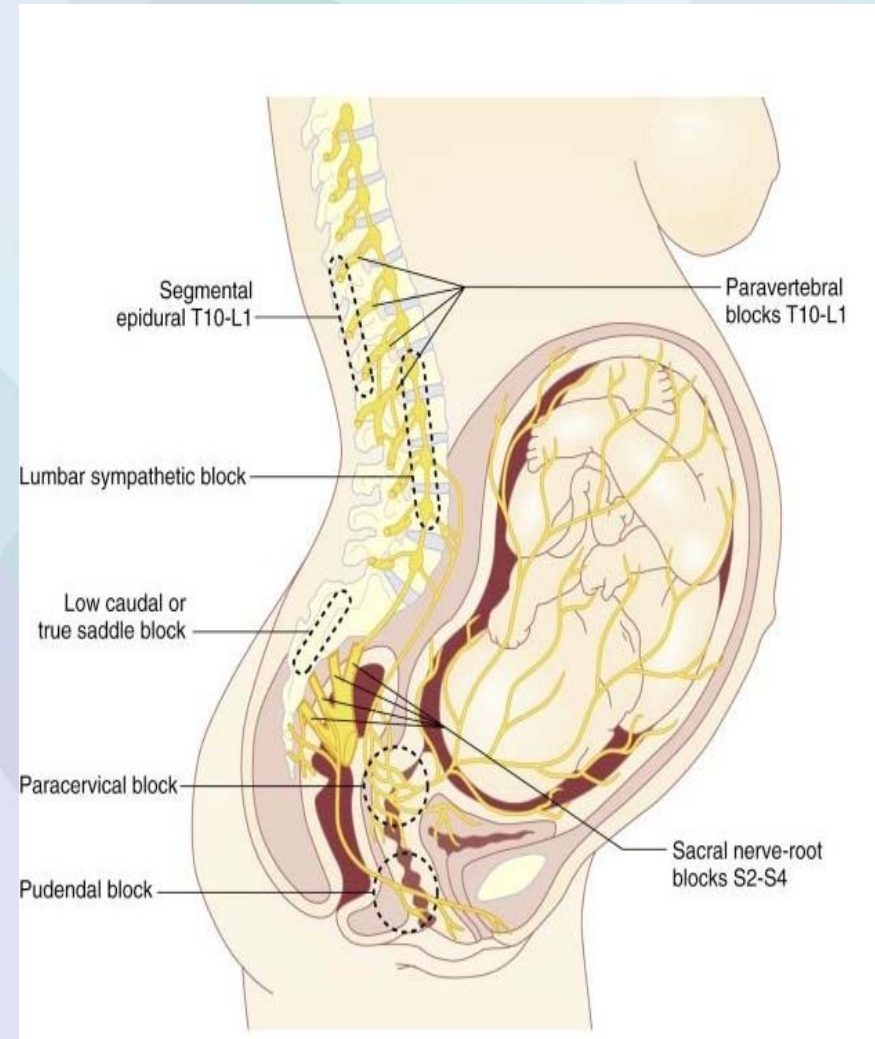
Pathophysiology of Labour pain

Visceral pain

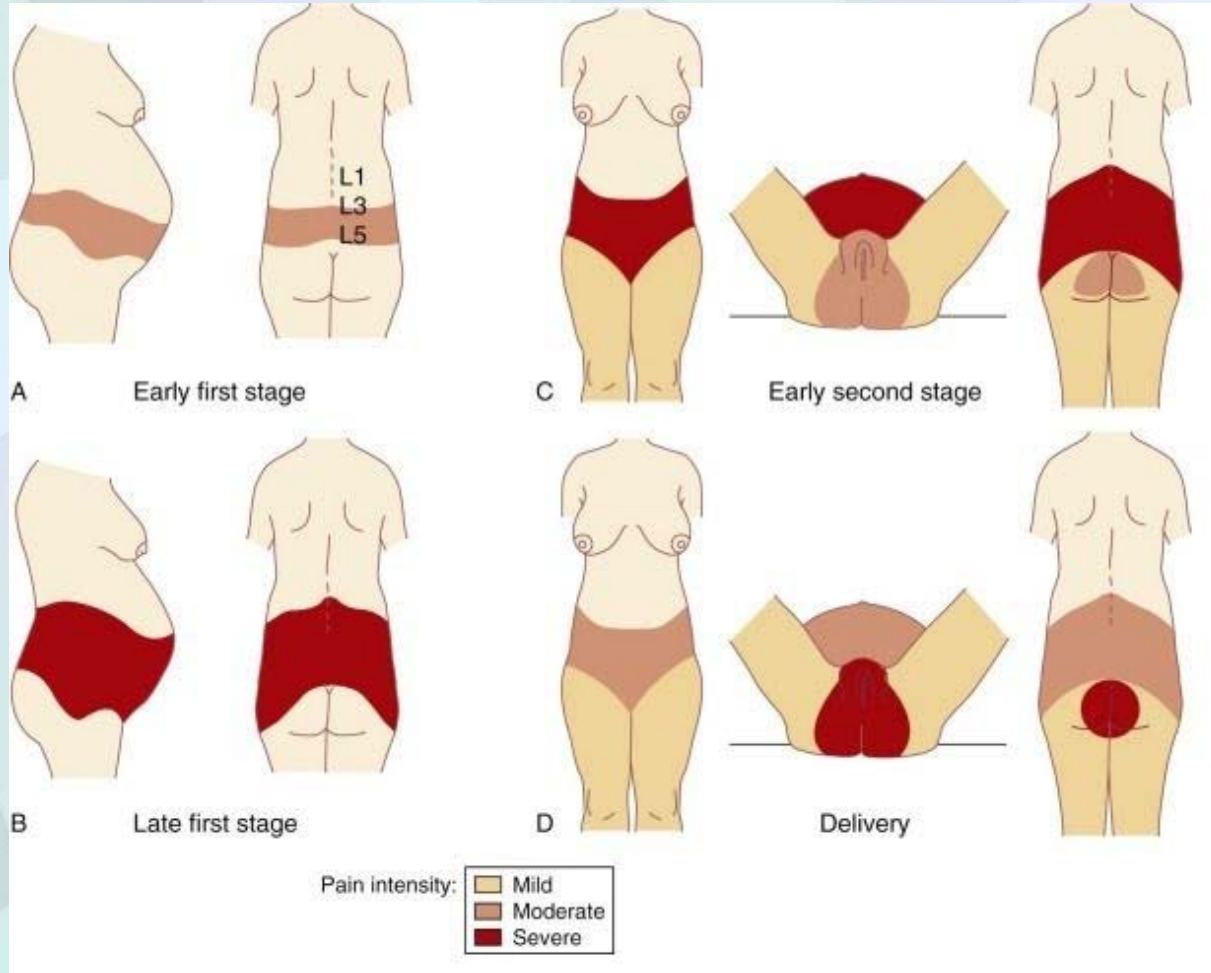
- First stage
- T₁₀ - L₁
- Distension and stretching of LUS

Somatic pain

- Second stage
- S₂-S₄
- Distension of pelvic and perineal structures and compression of LS plexus

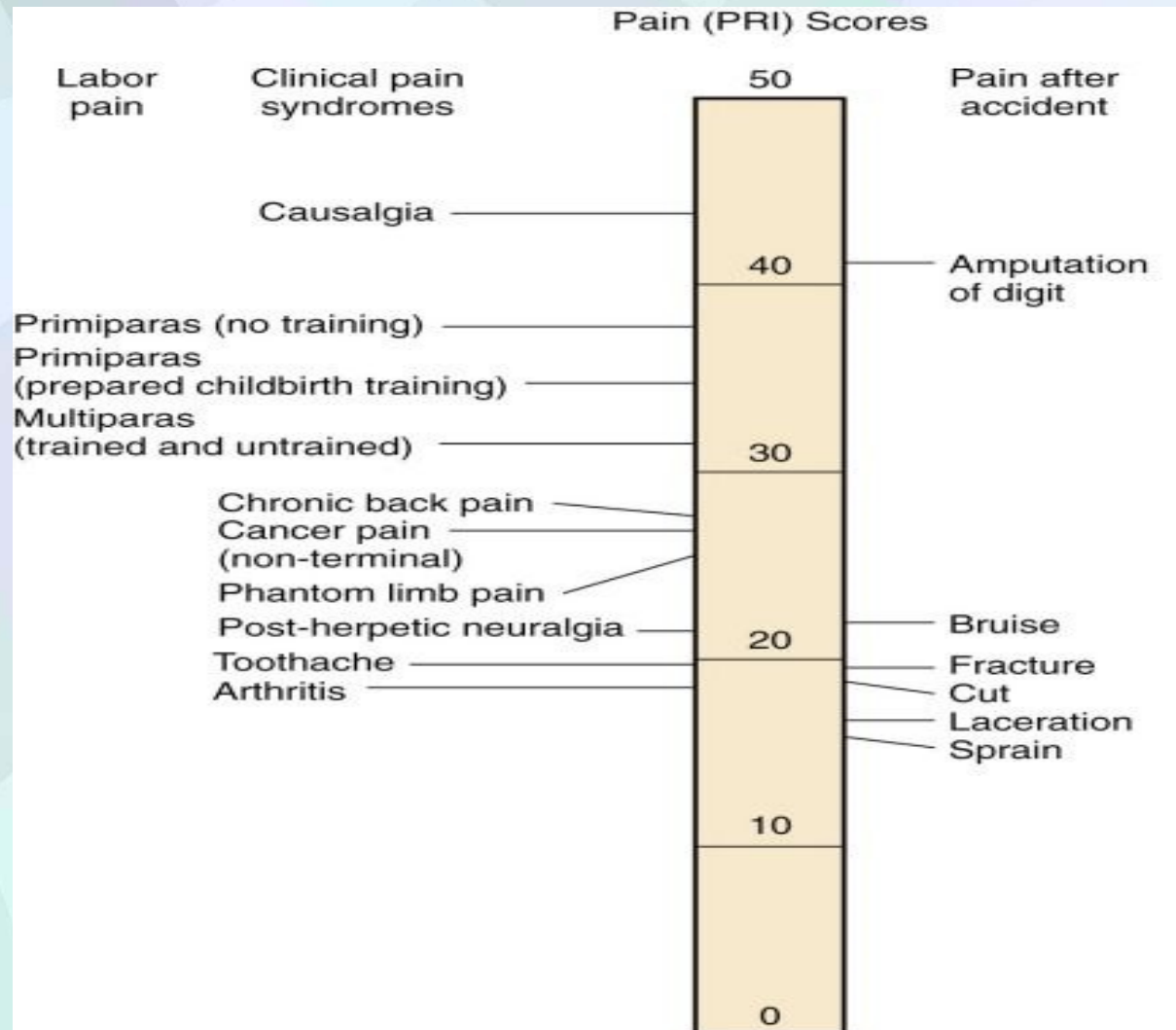


Pathways of labour pain



Distribution and intensity of labour pain during each stage of labour and delivery

Most severe pain a human can bear



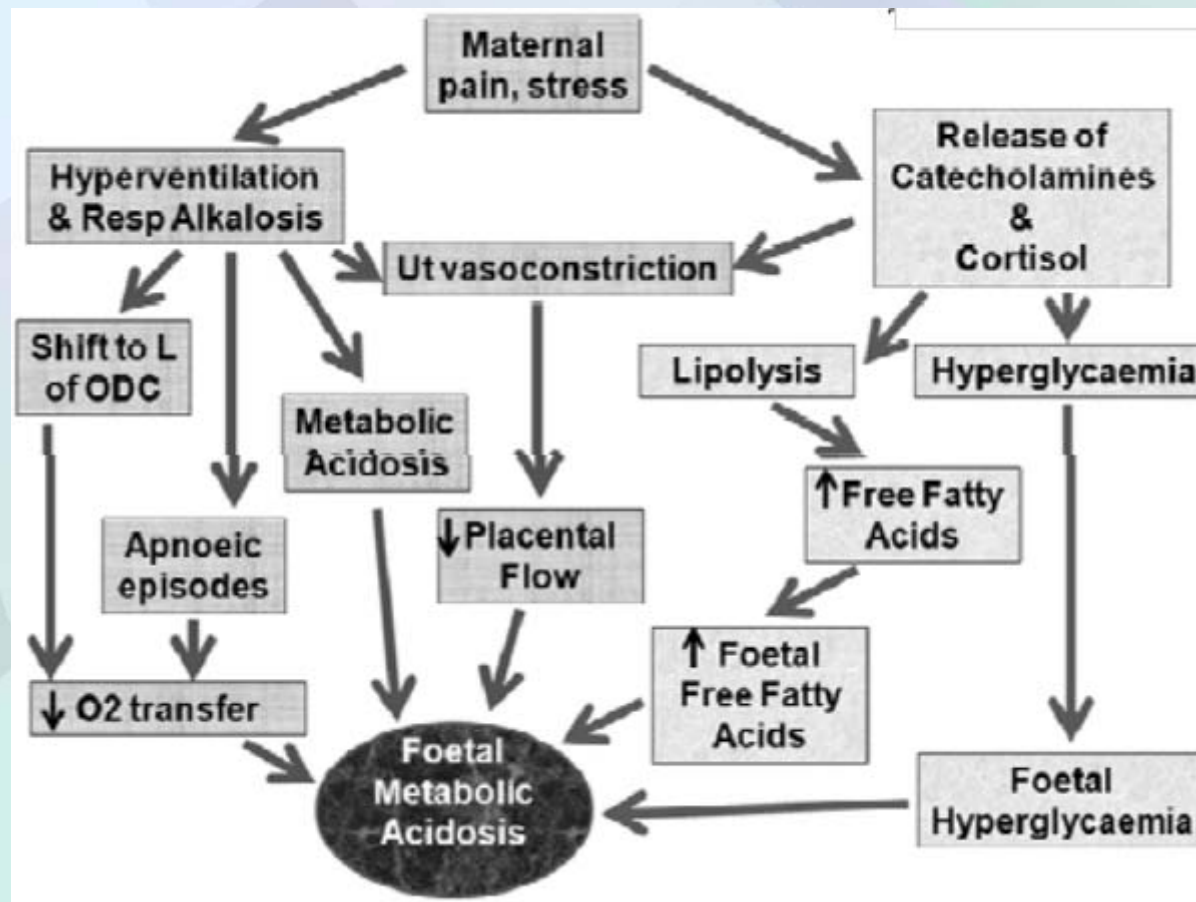
- McGill pain questionnaire comparing pain scores for women in labor

Why do we need Obstetric Analgesia?

- Humanitarian reasons
- Medical reasons



Effect of labour pain on mother and foetus



TECHNIQUES OF LABOUR ANALGESIA





Acupuncture

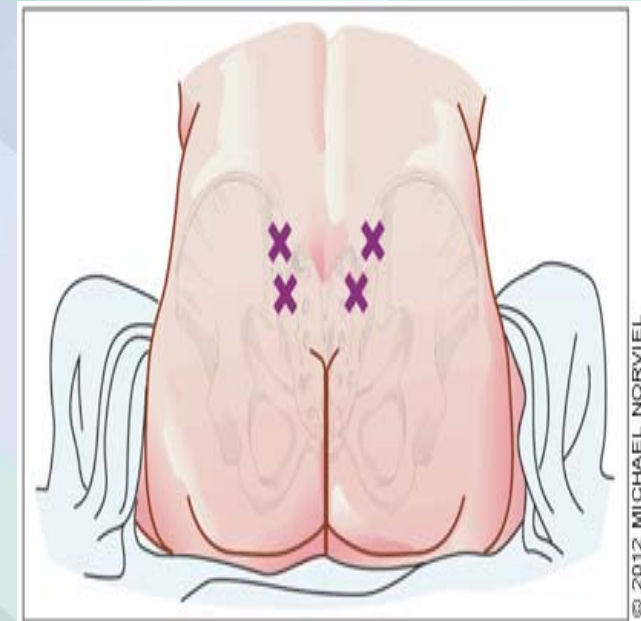
- Techniques have been used in China
- Both for surgery as well as for pain relief





Intradermal saline injections

- 25G needle
- 0.1-0.15 mL Intracutaneous injections of sterile water
- Point 1: PSIS
- Point 2: *1cm medial, & 1-2 cm inf*
- Sharp burning pain 20-30 sec → pain relief after 2 min → 45 min-3 h
- No side effects



Intracutaneous Injections of Sterile Water over the Sacrum for Labour Analgesia. *Ind Journal of Anaes* 2009; 53 (2):169-173











Parenteral opioids

- Pethidine
- Fentanyl
- Remifentanyl
- Tramadol
- Diamorphine
- Nalbuphine
- Butorphanol

Administration can be by IV, IM & patient controlled methods



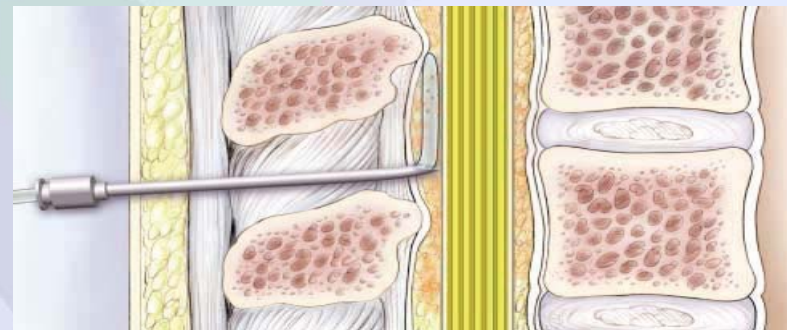
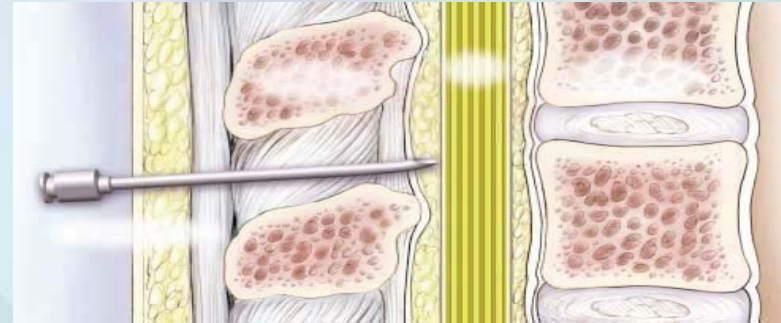






Lumbar epidural analgesia

- **Gold standard** technique for pain control in obstetrics
- Low doses of local anesthetic or opioid combinations are administered to provide a continuous T10-L1 sensory block during the first stage of labor.
- Adv-
 - ✓ safe and effective
 - ✓ without appreciable motor blockade
 - ✓ extended to provide surgical anaesthesia













Dosage of Epidural Catheter

DRUG	INITIAL INJECTION	CONTINUOUS INFUSION
Bupivacaine	10-15 mL of a 0.25%-0.125% solution	0.0625%-0.125% solution at 8-15 mL/hr
Ropivacaine	10-15 mL of a 0.1%-0.2% solution	0.5%-0.2% solution at 8-15 mL/hr
Fentanyl	50-100 µg	1-4 µg/mL
Sufentanyl	10-25 µg in a 10-mL volume	0.03-0.05 µg/mL



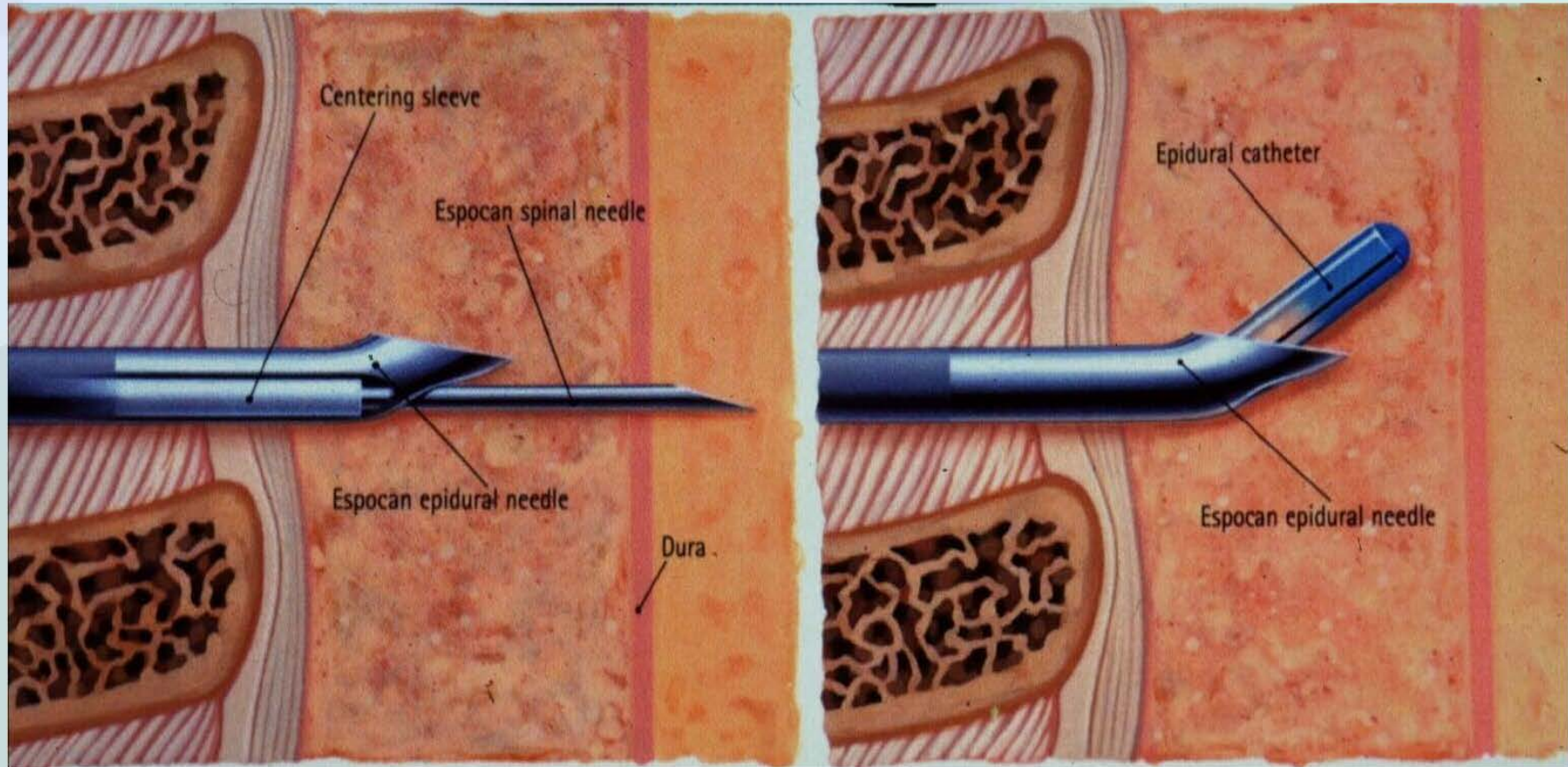




Intrathecal drugs

INTRATHECAL DRUGS	DOSE	EFFECT
OPIOIDS ALONE Fentanyl Sufentanil Morphine	15-25 mcg 5-10 mcg 0.1-0.2 mcg	Profound analgesia with absence of motor block No maternal hypotension Foetal bradycardia
LA ALONE Bupivacaine 0.25% Ropivacaine 0.2% Lignocaine 1.5%	2.5 – 5 mg 2 – 4 mg 20 – 40 mg	Excellent analgesia but significant motor block
ALPHA 2 AGONIST Clonidine	30 – 50 mcg	Moderate analgesia of short duration Significant sedation and hypotension











Drugs

- Local anaesthetics
 - Bupivacaine
 - Ropivacaine
 - Levobupivacaine
- Adjuvants
 - Opioids
 - Clonidine
 - Neostigmine













Newer Insights into the Myths and Controversies

Prolonged 2nd stage of labour

- Early epidural did not affect lengths of labour or caesarean rates
- It is actually associated with shorter labour compared with late epidural placement
- Women managed actively in labour, regardless of timing of epidural placement, had shorter duration than controls



**Weiczorek, IJOA 2010, 19:273-7, Uppal, Anaesthesia 2010, 65:652
Kajekar, IJOA 2010, 19:S44.**









Fetal bradycardia



- Incidence of 11-30%
- Management of fetal bradycardia associated with uterine hyperactivity:
- LUD, fluids, oxygen, interrupting oxytocin administration, raising maternal BP, IV or SL NTG

Reynolds F, Best Practice & Research Clinical Obstetrics and Gynaecology 2010, 24: 289-302

- CSE with subarachnoid injection of local anaesthetic without opioids f/b early initiation of epidural analgesia provides satisfactory pain relief
- minimises the risks of opioid-induced transient fetal bradycardia.

Archives of Gynecology and Obstetrics 2009; 279: 329-34.





THANK YOU