

Ultrashort Spinal Anesthesia for Ambulatory Surgery

Day Surgery

- * UK: 1996 – 2003
55.7% - 67.2%

- * NHS: „ treating day surgery as the norm for elective surgery“

Goals of Outpatient Anesthesia

- * Ensure rapid recovery
- * PACU time short, or
- * Bypass PACU

Day Surgery

- * Cost – effective
- * Cuts waiting times
- * Popular with patients
- * Reduces the risk of hospital acquired infections

Ambulatory Anesthesia

- * Minimize potential side-effects:

- * Hypotension
- * Pain
- * PONV
- * Voiding

SA in Ambulatory Surgery

CON

Induction time

PDPH

Long lasting motor block

Urinary retention

SA in Ambulatory Surgery

PRO

- * Less hemodynamic complications
- * Less respiratory complications
- * Less PONV
- * Better pain control
- * Cheaper
- * Patient positioning safer
- * Patient wish

Toxicity of LA Agents

Highest

(Tetrac., Bupivac.)

Medium

(Lidoc., Priloc., Mepivac)

Lowest

(Chloroprocaine)

Duration of Anesthesia

Long (Ropivac., Bupivac)

Short (Artic., Priloc.)

Ultrashort (Chloroproc.)

CHLOROPROCAINE

- * 1946 CP synthesized from procaine
 - * More **potent** (2.5 times) than procaine
 - * **Lowest** potential **toxicity** (half of procaine)
 - * Fast onset
 - * Short duration
 - * A very short half – life
 - * Rapid enzymatic hydrolysis

CHLOROPROCAINE

*Preservative:

- Methylparaben 1956

*Antioxidants:

- Sodium bisulfite 0.2% 1956
- Sodium bisulfite 0.07% 1984
- EDTA 0.01% 1987 - 1998

Spinal Chloroprocaine

* 1952 Foldes > 3%

* 1995 Palas 0.5%

* 2001 Palas 1%



STEVEN SPIELBERG Presents

BACK TO THE FUTURE™

„A PERSON WITH A NEW IDEA IS A CRANK
UNTIL THE IDEA SUCCEEDS“

Mark Twain

Spinal Chloroprocaine

- * Palas TAR
 - * 1% Chloroprocaine for spinal anesthesia
 - * Reg Anesth Pain Med 28:A52, 2003



Spinal CP vs Lidocaine

40mg 2% CP vs. 40mg Lidocaine

- * CP faster resolution of sensory blockade
- * CP more rapid attainment of discharge criteria
- * Lidocaine mild to moderate TNS (7/8)
- * CP had no TNS

Kouri ME, Kopacz DJ: Anesth Analg. 2004

Intrathecal Lidocaine vs. Chloroprocaine

- Prospective, randomized, double-blind study

Chloroprocaine: faster onset

Chloroprocaine: faster recovery

Chloroprocaine: faster ambulation

- Casati A, Fanelli G et al. Anesth Analg 2007

Chloroprocaine vs Articaine as Spinal Anaesthetics for day-case Knee Arthroscopy

40mg Chloroprocaine (n=39)

60mg Articaine (n=39)

Recovery: Motor block 75' cp / 135' artic

Sensory block 105' cp / 165' artic

Förster et al: Acta Anaesth Scand. 2011

Comparison of Bupivacaine and Chloroprocaine for Spinal Anesthesia for Outpatient Surgery: Double-blind randomized Trial

106 pts:

0.75% hyperb. Bupivac. 7.5mg

2% Chloroprocaine 40mg

Discharge time:

353' Bupi vs. 277' Cp

Regression of sens. Block:

329' Bupi vs. 146' Cp

Lacasse MA et al: Can J Anaesth, 2011

Spinal Chloroprocaine and Fentanyl

- * Adding Fentanyl prolongs block minimally
 - * 120 min vs. 100 min
- * Postoperative analgesia better up to 120 min
- * Side effects (itching) with 20mcg
- * 10mcg FNT vs. plain, no advantage

Spinal Chloroprocaine and Clonidine

8 volunteers

30mg CP with 15mcg clonidine

Sensory block to complete regression +30%
(131' vs. 99')

Tourniquet tolerance +40% (46' vs. 33')

Motor block +20% (79' vs. 65')

Davis BR, Kopacz DJ. Anesth Analg; 100, 2005

Chloroprocaine for spinal anesthesia: a retrospective analysis:

503 patients for outpatient procedures

Time from injection to ambulation/discharge:

107 +/- 24 minutes

Hejtmanek, Pollack: Acta Anaesth. Scand. 2011

SA with 1% CP vs GA in day Surgery

C. Camponovo, Acta Biomed 2014; Vol.85

- * Knee arthroscopy:
- * GA (LMA with Propofol/FNT 28 pts)
- * SA (1% chloroprocaine 28 pts)

- * Results: SA Group: PACU not necessary
 Shorter Hospital Stay (203 vs 326 Min)
 Cheaper (53 SFR vs 78 SFR)

Preparations for CP Spinal

- * Don't lose time (Surgeon, nurses...)
- * Prepare Pt as much as possible before injection
- * After Injection ready to proceed to the OR
- * Infrastructure of the hospital should be available

Experience with 1% spinal CP

Results

- Peak block level T10 (L1 – T6)
- Onset of block within 7 minutes
- No anesthetic failure
- Max. surgical time 40-50 minutes
- Ambulation 105 minutes (80 – 120)
- PACU bypass possible
- No TNS, Allergies, Urinary retention

Indications for Spinal 1% CP

- * Orthopedic surgery
- * Perineal Surgery
- * OB/Gyn
- * Urology

CP 1% & 0.5%

Verkauf in der Schweiz bis 2015

- Ampres: 100,000 Ampullen
- Ivracain: 1,000,000 Ampullen

1% spinal Chloroprocaine Summary

- In use in Switzerland since 2001
- Fast onset and recovery
- Reliable
- No side-effects
- Recommendable for ambulatory anesthesia in short surgical procedures