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

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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%

SARA 2015
„A PERSON WITH A NEW IDEA IS A CRANK UNTIL THE IDEA SUCCEEDS“

Mark Twain
Spinal Chloroprocaine

- Palas TAR
- 1% Chloroprocaine for spinal anesthesia

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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

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


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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

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


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SA with 1%CP vs GA in day Surgery


*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