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SPINAL PRILOCAINE IN HIP REPLACEMENT SURGERY DOES IT FIT FOR EVERYONE!

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IS THERE SOME BENEFITS IN SHORT AND INTERMEDIATE ACTING SPINAL LOCAL ANAESTHETICS DURING JOINT REPLACEMENT SURGERY?

OLD NEW LOCAL ANAESTHETICS

Revival of old local anesthetics for spinal anesthesia in ambulatory surgery

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Purpose of review

In recent years, several older (first intrathecal use in the 1950s, 1960s, and 1970s) local anesthetics have been investigated as spinal anesthetics in ambulatory surgery because these drugs are claimed to cause less transient neurologic symptoms (TNS) than lidocaine which was the main spinal anesthetic for surgery of short-duration for decades. The review covers the current literature.

Recent findings

Several recent reports have dealt with the short-acting chlorprocaine and articaine and the intermediate-duration-acting prilocaine. Mepivacaine, another intermediate-acting drug, was applied in one trial only. Various dosages of these drugs either alone or with a small dose of fentanyl were compared with each other, with lidocaine, or with the

- ▶ chlorprocaine, articaine, prilocaine, mepivacaine

PRILOCAINE

- ▶ PC is short to intermediate acting amino - amide LA
- ▶ In place of Lidocaine due to less transient neurological symptoms
- ▶ Emphasis on outpatient surgery

PRILOCAINE

S.P. LACROIX¹, P.R. MALAISE², S.V. DEGEY³, E.P. DEFLANDRE^{2,3,4}

PREDICTABILITY OF THE DURATION OF MOTOR BLOCKADE INDUCED BY UNIQUE INJECTION OF INTRATHECAL PRILOCAINE – AN OBSERVATIONAL STUDY

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- ▶ 384 participants
- ▶ L3-4, L4-5
- ▶ Significant correlation between DMB and 1) the prilocaine dose ($P < 0.001$), and 2) the BMI ($P = 0.011$)
- ▶ Wide variability in the DBM (mean \pm SD): 90.12 ± 30.36 minutes
- ▶ Unknown pharmacological property of hyperbaric prilocaine could restrict its use for day-care surgery



IS SPINAL SUITABLE FOR AMBULATORY SURGERY



- ▶ Advising Prilocaine and 2-Chlorprocaine.
- ▶ SA provides an alternative approach for patients with comorbidities
- ▶ Education of surgeons and preoperative, operating theatre and recovery staff
- ▶ How to supplement analgesia with locoregional techniques and systemic analgesia
- ▶ Establishing local protocols for patient mobilisation after spinal anaesthesia and the management of POUR and PDPH.

HIP AND KNEE REPLACEMENT-CHLORPROCAINE?

Original Research

Spinal Anesthesia Using Chloroprocaine is Safe, Effective, and Facilitates Earlier Discharge in Selected Fast-track Total Hip Arthroplasty

Carl L. Herndon, MD ^{*}, Roxana Martinez, BA, Nana O. Sarpong, MD, MBA, Jeffrey A. Geller, MD, Roshan P. Shah, MD, JD, H. John Cooper, MD

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- ▶ Chloroprocaine was a safe and effective medication for spinal anesthesia in a selected fast-track THA population where operative times are predictable
- ▶ Compared with bupivacaine, chloroprocaine was associated with shorter hospital LOS after primary THA.
- ▶ It was also associated with shorter operative time, lower EBL, less intraoperative hypotension, shorter PACU LOS

HIP AND KNEE REPLACEMENT-CHLORPROCAINE?



- ▶ Chlorprocaine vs Prilocaine
- ▶ Sensory function regaining earlier (169 (56,1) min vs 248 (59,4)).
- ▶ Sensory block T12 almost identical
- ▶ At T10: hyperbaric prilocaine did earlier, and longer
- ▶ Motor function regaining identical in both groups (85 (70–99) vs 86 (76–111) min).
- ▶ Voiding earlier, using Chlorprocaine (203 (57,6) min vs 287,3 (47,2) min).

HYPERBARIC PRILOCAINE



- ▶ Medline and EMBASE databases 1966 to 2015.
- ▶ 14 prospective and 1 retrospective study were retrieved.
- ▶ The duration of surgical blockade can be adjusted using doses from 40 to 80 mg.
- ▶ Hyperbaric prilocaine in doses of 10 mg can be used for perianal procedures.
- ▶ Four cases of TNS were reported in 486 patients in prospective studies, but none in 5000 cases in a retrospective data set.

HIP REPLACEMENT - AMBULATORY SURGERY?

PERI OPERATIVE MANAGEMENT



On arrival

Gabapentin 300-600mg
Pantoprazole 40mg
Walk to OR



Induction room

Midazolam 1-2mg
Short-acting spinal-
Prilocaine
Sedation-propofol
Antibiotics
1g IV Tranexamic Acid



Operating room

Posterior approach
Peri-articular injection
Ketamine 20-40mg
IV diclofenac/paracetamol



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Recovery Room

IV fluids d/c (1000-
1500ml)
PO Oxycodone 5-10mg
Water

B421 FEASIBILITY OF PRILOTEKAL FOR DAY CASE DIRECT ANTERIOR APPROACH TOTAL HIP ARTHROPLASTY (DAA THA) UNDER SPINAL ANAESTHESIA (SA)

H Yu, P Sadeghi, A Palmer, S Galitzine*. *Nuffield Orthopaedic Centre, Oxford University Hospitals Foundation Trust, Oxford, UK*

10.1136/rapm-2022-ESRA.497

Hospital stay was shorter than median hospital stay of primary THA (2,7 days) and national data (3.5-4.5 days in 2016-2021)

Conclusions In selected patients, spinal anaesthesia with adjusted dose of Prilotekal to match a longer procedure, combined with sedation, is a suitable technique to provide anaesthesia for day case DAA THA. Good team work between surgical and anaesthetic teams is paramount to success.

DOI: 10.2478/prolas-2019-0067

FAST-TRACK SURGERY AND EARLY REHABILITATION
FOR TOTAL HIP REPLACEMENT IN HOSPITAL
OF TRAUMATOLOGY AND ORTHOPAEDICS

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- ▶ SA, 18 mg Bupivacaine vs 70 mg of plain Prilocaine
- ▶ 48 patients
- ▶ Hypothesis: patient recovery may be improved

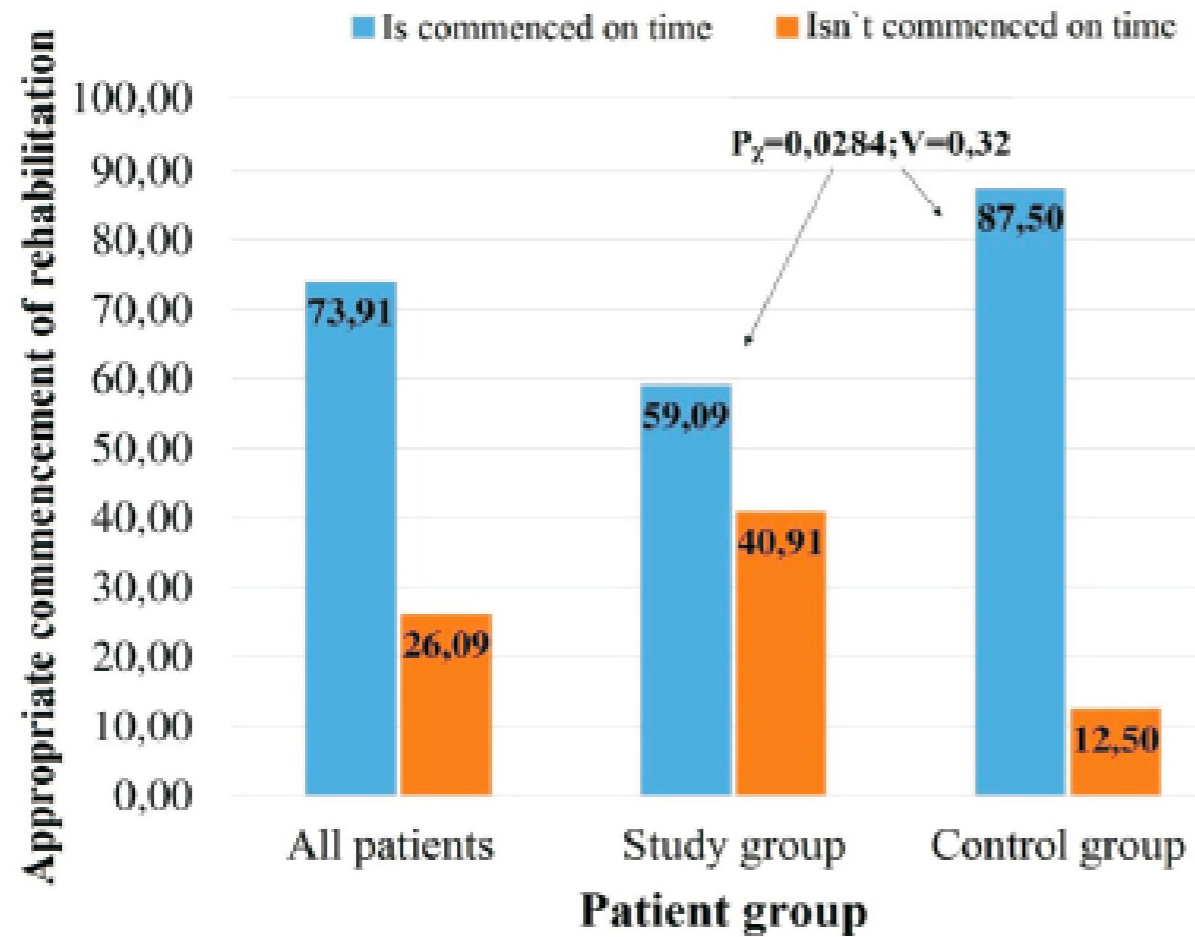


Fig. 1. Patient division distribution depending on the time when rehabilitation is commenced. P_{χ^2} , statistical significance using chi-squared test; V, Cramer's V correlation coefficient.

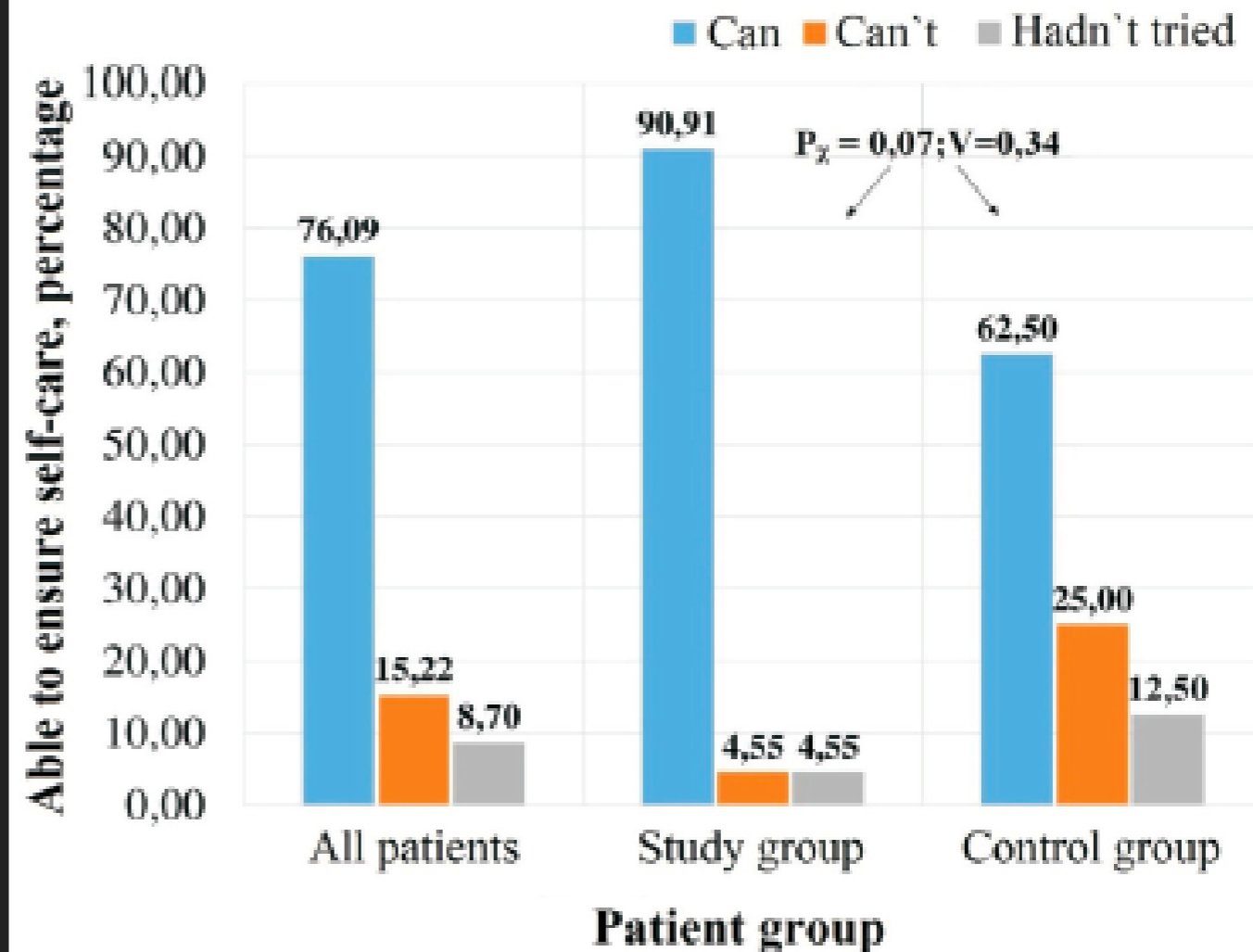


Fig. 3. Patient ability to ensure self-care. P_{χ^2} , statistical significance using chi-squared test; V, Cramer's V correlation coefficient.

- ▶ Earlier rehabilitation, better self –care and shorter lengths of stay

SPINAL HYPERBARIC PRILOCAINE FOR HIP REPLACEMENT

- ▶ Efficacy of the ERAS (enhanced recovery after surgery) program in elective total hip arthroplasty
- ▶ DRKS-ID:DRKS00032262
- ▶ Recruitment Status: Recruiting
- ▶ ASA I-II
- ▶ BMI 20-35

STUDY GROUP

- ▶ Training to walk before surgery
- ▶ Supplemental feeding
- ▶ Spinal anaesthesia (the drug dose is adjusted individually for each patient) with hyperbaric prilocaine 60-100 mg
- ▶ Infiltration analgesia with Ropivacaine up to 225 mg
- ▶ A full meal at least 2 hours after surgery.
- ▶ Patients are verticalized to standing on the day of surgery 5-6 hours after surgery
- ▶ Patients are discharged from the hospital on the day when the patient is able to move with crutches on a flat surface and up stairs

CONTROL GROUP

- ▶ No training to walk with a support frame and crutches the evening before surgery
- ▶ No supplemental feeding with Nutricia preOp
- ▶ Standardized spinal anaesthesia (the drug dose is adjusted individually for each patient) with bupivacaine 15-18 mg
- ▶ Infiltration analgesia with Ropivacaine up to 225 mg
- ▶ A small meal like for other patients after surgery
- ▶ Patients are verticalized the day after surgery
- ▶ Patients are discharged from the hospital on the day when the patient is able to move with crutches on a flat surface and up stairs

OUTCOMES

- ▶ Primary outcome:
 - ▶ Number of days spent in hospital
- ▶ Secondary outcome:
 - ▶ HOOS, JR scale – number of points 6 weeks after surgery and change in number of points from the initial state the day before surgery.
 - ▶ Satisfaction with treatment NRS from 0 to 10 on the day of discharge and 6 weeks after surgery.
 - ▶ Pain NRS at rest and during movement on the day of discharge and 6 weeks after surgery.
 - ▶ Morphine consumption on the day of surgery, on the first postoperative day, on the second postoperative day, and throughout the hospitalization period.

HOOS SCALE

HSS

Hip dysfunction and Osteoarthritis Outcome Score for Joint Replacement (HOOS, JR.)

English version 1.0

Instructions

This survey asks for your view about your hip. This information will help us keep track of how you feel about your hip and how well you are able to do your usual activities.

Answer every question by ticking the appropriate box, only one box for each question. If you are unsure about how to answer a question, please give the best answer you can.

Pain

What amount of hip pain have you experienced the last week during the following activities?

1. Going up or down stairs

None Mild Moderate Severe Extreme

2. Walking on an uneven surface

None Mild Moderate Severe Extreme

Function, daily living

The following questions concern your physical function. By this we mean your ability to move around and to look after yourself. For each of the following activities please indicate the degree of difficulty you have experienced in the last week due to your hip.

3. Rising from sitting

None Mild Moderate Severe Extreme

4. Bending to floor/pick up an object

None Mild Moderate Severe Extreme

5. Lying in bed (turning over, maintaining hip position)

None Mild Moderate Severe Extreme

6. Sitting

None Mild Moderate Severe Extreme

RESULTS:

- ▶ Still 38 patients randomised
- ▶ Dropouts - **2 patients in the study group - switch to the general anaesthesia**
- ▶ 27 patients finished follow-up

RESULTS

Measurment/group	Study N 12	Comtrol N 15	Significance
Duration of surgery min median	92	85	ns
Pain at rest POD1 M (NRS) Median (min;max)	0.5 (0;3)	2.0 (0;6)	0.012
Pain at movement discharge (NRS) Median (min;max)	2.00 (0;5)	3.0 (1;4)	ns
Pain at rest discharge (NRS) Median (min;max)	0 (0;2)	1.0 (0;5)	0.067 ns
Pain during movement 6 weeks. Median (min;max)	0 (0;5)	2.0 (0;3)	ns
Total morpine consumption mg. Median (min;max)	10.00 (0;40)	20.00 (0;50)	ns
HOOS pre raw (median)	8.00	13.00	0.067 ns
HOOS post raw (median)	0.00	2.00	ns
HOOS changes	-8 (-12;-5)	-9 (-13;-4,5)	

SUCCESS CRITERIA

- ▶ Pain vs residual motor deficit
- ▶ Fascial blocks, infiltration
- ▶ Multimodal oral analgesics' regimen immediately after surgery, with the intent of achieving a steady state before RA wears off
- ▶ Successful collaboration with surgeons!!!!!!



Ačiu



Aitah



Thank You

Paldies

