Continuous Peridural Anaesthesia - Element of Comfort Associated with Vaginal Birth

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Abstract

Objectives: *Were assessed the effects of the epidural analgesia upon the way of birth appreciated as spontaneous/instrumental birth/caesarean section, both globally and comparative between ropivacaine (R) and bupivacaine (B). Were assessed also the effects of the local anaesthetics used (R and B) on foetal outcome.* ***Material and method:*** *After the obtaining of the consent of the Hospital Ethic Committee, we studied a group of 430 parturients, 200 in group R and 230 în group B . Patients were primigravidas or multiparas, ASA I-II, age, degree of maternal block the way of birth.* ***Results:*** *The quality of analgesia showed no significant differences between group R and B. Motor block was more intense în group B. Spontaneous birth 77%, out of which 51% needed ocytocic perfusion, vidextractor 15.9%, forceps 3.6%, CS 3%. Fetal assessment showed Apgar score 10 in 38% cases, and 9 în 51% cases. The administration of ropivacaine determined a less intense bloc, allowing the more active participation of the parturient, resulting a higher incidence of spontaneous vaginal births. The versatility offered by CPA may fulfil the variable demands which appear in the labor dynamics, in spontaneous vaginal birth, the instrumental one or CS.* ***Conclusions:*** *The minimal impact on foetal outcome, the low cardio and neurotoxic level, the minimal motor block recommends Ropivacaine as local anaesthetic, the most suitable for CPA at birth.*

Keywords: *birth, pain, peridural, Ropivacaine*

Introduction

Pain at birth, even though is considered physiological; it determines a stress response with adrenergic hyperactivity:

- increasing the systemic vascular resistance - lowering the uteroplacental flow;
- decreasing Pa CO_2 - decreasing the foetal O_2;
- decreasing Pa O_2 - hypoxia + foetal acidosis;
- disrythmic uterine contractions.

The segmentary CPA concept was created a few decades before and consists in achieving a selective analgesia T10-L1, conserving the sensitive perception and abdomino-pelvin and muscular tone.

The manipulation of the anaesthetic doses of local anaesthetic plus opioid with much more pharmacological subtlety permits the conservation of the pushing reflex and the pelvic diaphragm tone with cu minimal impact on obstetrical outcome.

In spite of these anaesthetic subtleties, the association forceps - epidural persists in many people's minds continues to be perpetuated in books and it is the first on the few objections list which still feeds the controversy between obstetricians and anaesthesiologists.

The objective of this prospective study consists in:

- the evaluation of the CPA effects of the epidural analgesia upon the way of birth appreciated as spontaneous/instrumental birth/caesarean section, both globally and comparative between ropivacaine (R) and bupivacaine (B);
- the effects of the local anaesthetics used (R and B) on foetal outcome evaluated with APGAR score and NACS.

Lot's demography

We selected 430 patients whereby:

- 200 in the Ropivacaine group;
- 230 in the Bupivacaine group.

We must point out that all these patients were primiparas or secundiparas ASA I-II, aged 18-40 years, with term or preterm (4) pregnancies, in the active phase of labour, spontaneous or pharmacologically induced, cu with singleton or twin pregnancies (3 cases).

Indications for CPA

1. both for necessity or therapeutic reasons in:

- soft tissue distocia;
- associated with labour test in context of preeclampsia;
- in preterm birth (4 cases);
- in association with forceps delivery.

2. as an element of comfort for the parturient, on the patient's request.

We insist on the efficiency and comfort obtained by insertion of the waiting catheter, comparing with analgesia installed after the labour has started for a few hours.

The analgesia must also be efficient until the deliverance of the placenta and the episioraphy are done.

The induction or the stimulation of labour with oxitocin has been realised according to the obstetrical protocol of the hospital.

Monitoring:

- maternal and foetal cardiovascular response: BP, pulse, FCB are monitored with no exception;
- Sp O_2 and ECG are not usually performed;
- tachogram is monitored routinely; in most of the cases we may find a decrease in the intensity of the contractions for maximum 15 minutes.

Evaluation:

- the quality of analgesia is evaluated after NRS (numeric score of evaluation of pain from 0-10);
- motor block is evaluated after modified Bromaje scale (de la 0-3);
- foetal outcome is evaluated after:
  - ✓ APGAR score at 1 and 5 min;
  - ✓ NAC score at 2 hours and 24 hours.

NACS: differentiates the CNS depression induced by the anaesthetic drugs to that provoked by traumatic birth or peripartum asphyxia (values of 30-40 ascertain an unaffected newborn).

Results:

The quality of analgesia showed no significant differences between group R and B.

- 80% patients - excellent NRS <2;
- 16% patients - good NRS<5;
- 4% patients - week analgesia NRS>7;
- period of time from the injection up to the delivery of the placenta was similar in both groups R and B;
- motor block: scale Bromage 0 for 51% in group R and 42% in B.

Way of birth:

1. spontaneous birth 77% - 49% without ocitocic uterine stimulation, and 51% with ocitocic uterine stimulation;

2. vacuum extraction 15.9% - 10% in group R and 21% in B;

3. forceps 3.6% only in group B;

4. CS 3% similar in both groups.

Foetal evaluation:

APGAR Score: 10 - 38%, 9 - 51%, 8 -10%, 7 - 1%

NACS score:

- NACS media at 2 hours - 36 for both groups but 21.8% R and 25.7% B have NACS <35;
- at 24 hours - NACS significantly higher for group of ropivacaine (R).

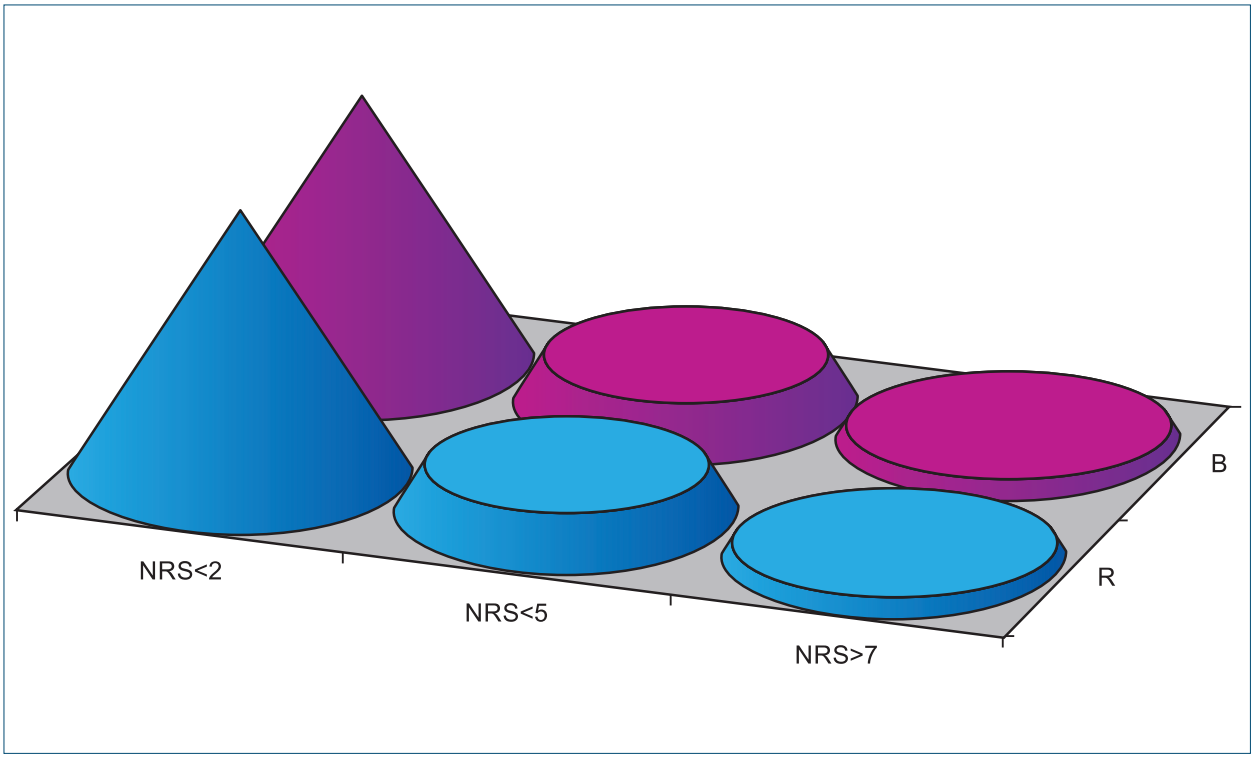
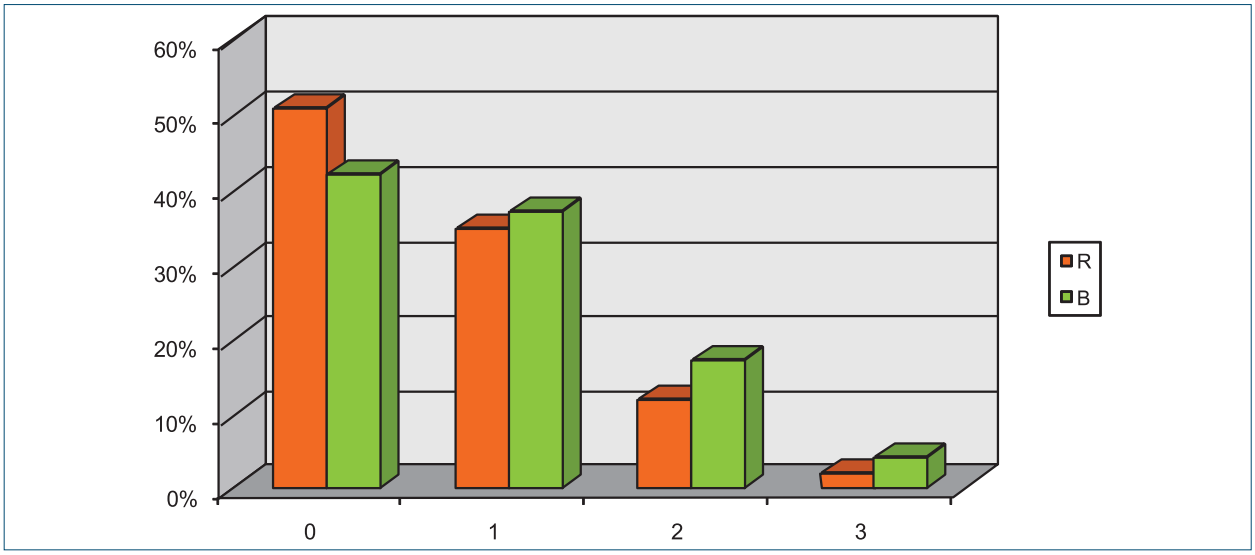


Figure 1

Figure 2 |



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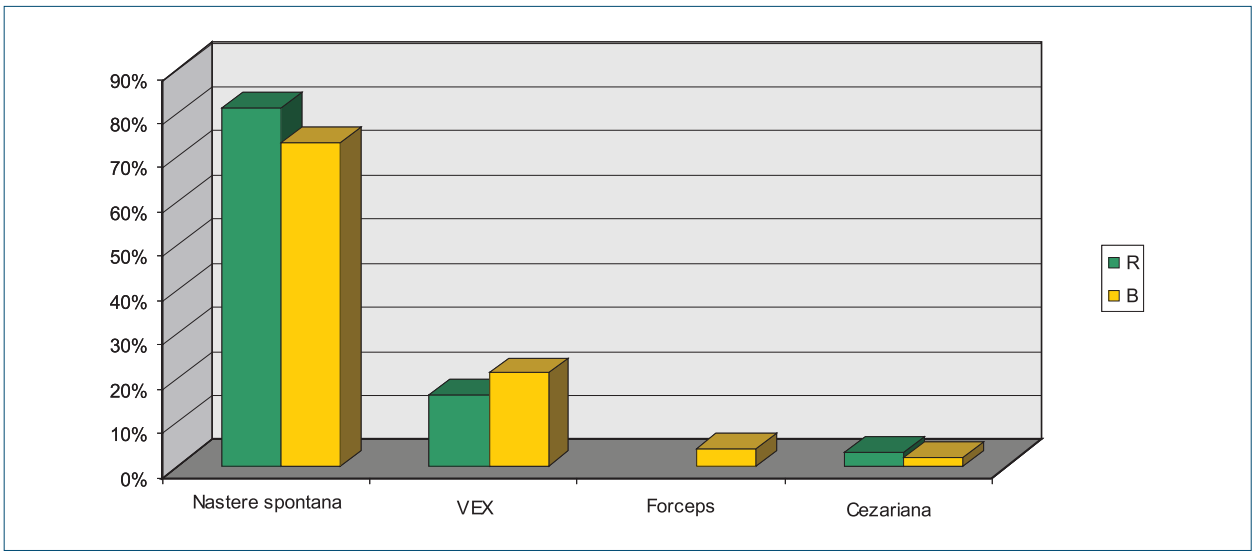

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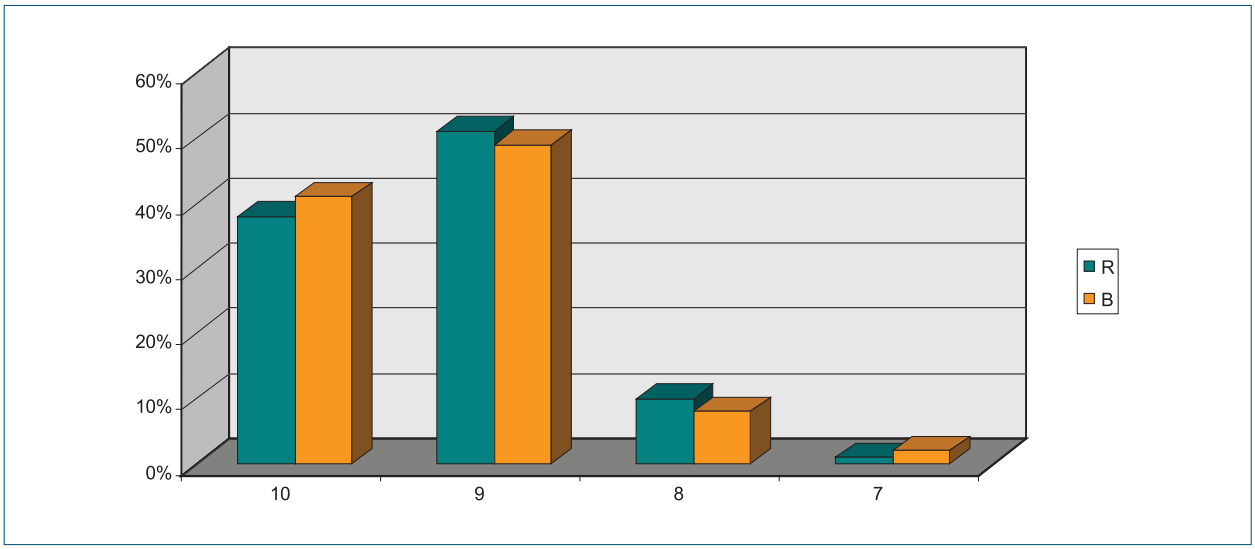

Conclusion

Versatility offered by CPA can fulfil the variable demanding which appear in dynamics of labour in spontaneous labour, assisted birth or CS, such as:

- Antispastic effect on cervix;
- CPA coordinates the uterine contractions dynamic distocia is present, shortening phase I of labour;
- In association with labour test, CPA differentiates the soft tissue distocia (reducible) and the bone distocia (irreducible);
- Improves the mother's status who conserves the energy and morale for the 2nd stage of birth coordinating efficiently the effort of pushing with every contraction;
- Improves the foetal oxygenation and utero-placental perfusion - useful element in preeclampsia or in placental insufficiency.

The low percentage (19%) of instrumental births in our Clinic, comparing with the one found in the literature (33%), proves once again that the incidence of forceps delivery is associated with obstetrician's policy, who chooses or not to accept a prolonged 2nd stage and not with CPA.

High incidence of CS cannot be attributable to CPA.

Ropivacaine:

- better analgesia with minimal motor block;
- lesser neuro and cardiotoxical potential;
- minimal impact fœtal outcome, it has important qualities which recommend it as the most suitable anaesthetic for CPA at birth. ■

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