Comparison of 2-chloroprocaine 3% versus levobupivacaine 0.5% for neuraxial anaesthesia during caesarean section.

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Background and Goal of Study

Levobupivacaine is routinely used for epidural analgesia during labor. However, when urgent caesarian section is needed in parturients who already have an epidural catheter, a rapid and an adequate extension of the epidural block to a surgical block is mandatory. Due to its rapid speed of onset, we hypothesized that 2-chloroprocaine (2-CP) might be a better choice in this setting. The aim of the controlled, randomised study was to investigate the clinical efficacy and safety of 2-chloroprocaine 3% compared with levobupivacaine 0.5% for epidural anaesthesia during elective caesarean section.

Methods:

- Fifty ASA I parturients scheduled for elective caesarean section.
- Epidural administration of 13 ml 2-chloroprocaine 3% or levobupivacaine 0,5% after a test dose of 3 ml.
- Epidural addition of sufentanil 10 mcg for augmentation of epidural analgesia.
- Assessment of motor and sensory blockade every two minutes with drops of ethyl chloride. The speed of onset was defined as the time taken to loss of cold sensation at thoracic dermatome 4 (T4).
- Intravenous administration of alfentanil if VAS for pain > 3/10.

Results and Discussion:

- Recruitment was stopped prematurely due to poor results.
- Only five parturients were included: two parturients received levobupivacaine, three parturients 2-CP.
- Onset time of 2-CP 3% was 8, 10 and 10 minutes, for levobupivacaine 10 minutes for the first parturient and 20 minutes for the second after a 5 ml rescue bolus. Surgery started respectively after 30, 18 en 22 minutes in the 2-CP group.
- Supplemental intravenous alfentanil was needed in all but one parturient (levobupivacaine group).
- Supplemental epidural 2-CP was needed in all parturients in this study group, which is not described in our study design.
- Epidural anaesthesia was unsuccessful for surgery and needed conversion to general anaesthesia in two patients, one in both groups.

PROTOCOL

Figure 1: The randomised controlled trial stopped prematurely after including five parturients due to insufficient anaesthesia with epidural 2-chloroprocaine 3%.

Conclusion:

Based on the high failure rate, the use of 2-chloroprocaine 3% for neuraxial anaesthesia during caesarean section cannot be recommended. An adjusted study protocol is needed, taking into account the short working time of 2-chloroprocaine.

References:

Bjørnstad E, Iversen OLEE, Raeder J. Similar onset time of 2-chloroprocaine and lidocaine + epinephrine for epidural anesthesia for elective Cesarean section. *Acta Anaesthesiol Scand*. 2006;50(3):358–63.