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**Treatment of refractory post-dural puncture headache with low doses of the strong opioid piritramide**

Editor—Epidural analgesia is considered to be the most effective method for pain relief during labour and delivery. Concomitantly, post-dural puncture headache (PDPH) due to inadvertent dural puncture is the most frequent major complication. In obstetric patients, PDPH hinders them from feeding and nursing their newborns. Therefore, an efficient, rapid, permanently available, and harmless treatment is needed.

When conservative treatment is ineffective, the performance of epidural blood patch (EBP) is often recommended. However, evidence of this procedure is still limited. In obstetric patients, the success rate of EBP with 34% is lower than in general. The patient is at risk of complications with every repetition.

We report two cases of severe PDPH after accidental dural puncture during labour epidural analgesia, a 28-yr-old para 2 (168 cm/65 kg) at 35 weeks of gestation and a 33-yr-old para 0 (165 cm/65 kg) at 39 weeks. The epidural catheter was placed in the loss of resistance to saline technique at L3–4 space using an 18 G Tuohy needle. After the first attempt, the procedure was successfully repeated and live infants were delivered vaginally. The first patient developed a dull frontal postural headache 5 h and the second 10 h after dural puncture. In the absence of neurological symptoms, PDPH was diagnosed. In both patients, PDPH was completely refractory to conservative treatment with ibuprofen (≤ 1200 mg), diclofenac (≤ 75 mg), acetaminophen (≤ 1500 mg), caffeine (≤ 400 mg), and theophylline (≤ 200 mg) and also volume substitution and bed rest. In one patient, an EBP decreased pain only temporarily, in the other patient, EBP was not performed because of elevated inflammatory parameters.

In both patients, two and three applications of small doses of the strong opioid piritramide (3.75 mg) 5 days after onset of PDPH immediately and completely relieved headache without disturbance of breastfeeding. Already the first application reduced pain intensity from 8/10 and 5/10 NRS (numeric rating scale 0–10) to 3/10 and 2/10 NRS, respectively. In one case, only one more application was necessary 15 h later and in the other patient, two more applications were administered after 17 and further 19 h. A follow-up after several days showed no recurrence of PDPH symptoms.

A Cochrane Review revealed only a limited evidence for the use of common drugs in PDPH. The use of strong opioids in PDPH has never been evaluated systematically. Particularly in the postpartum period, the use of strong opioids is controversially discussed because of potential CNS depression of mothers and newborns. However, short-term maternal use of opioids seems usually safe and infrequently hazardous for their babies.

In our institution, the strong opioid piritramide is the opioid of choice for perioperative pain management. The potency ratio of morphine to piritramide is 1:0.7. Within 24 h, 15 mg (equivalent to 10 mg morphine) of piritramide is allowed to be administered i.v. (3.75 mg every 4–6 h) in a breastfeeding mother. To date, there are no reports of CNS depression of mothers or babies. Withdrawal in infants after cessation of administration has not been reported.

The mode of action of strong opioids in PDPH is still unknown. In preclinical studies, opioids were shown to act within the trigeminal system to inhibit neurogenic dural vasodilation and brainstem neuronal activity. As meningeal irritation and reflex vasodilation of the meningeal vessels are considered as well-established pathophysiological mechanisms of PDPH, these results could explain the mode of action of strong opioids.

Our case reports demonstrate that strong opioids, not yet included in the guidelines, may represent a promising tool in the management of post-partal PDPH.

**Declaration of interest**

None declared.

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