



Addition of neostigmine and atropine to conventional management of postdural puncture headache: *a randomized controlled trial*

Background:

Postdural puncture headache (PDPH) lacks a standard evidence-based treatment. A patient treated with neostigmine for severe PDPH prompted this study.

Methods:

This randomized, controlled, double-blind study compared neostigmine and atropine (n = 41) versus a saline placebo (n = 44) for treating PDPH in addition to conservative management of 85 patients with hydration and analgesics. The primary outcome was a visual analog scale score of ≤ 3 at 6, 12, 24, 36, 48, and 72 hours after intervention. Secondary outcomes were the need for an epidural blood patch, neck stiffness, nausea, and vomiting. Patients received either neostigmine 20 $\mu\text{g}/\text{kg}$ and atropine 10 $\mu\text{g}/\text{kg}$ or an equal volume of saline.

Results:

Visual analog scale scores were significantly better ($P < .001$) with neostigmine/atropine than with saline treatment at all time intervals after intervention. No patients in the neostigmine/atropine group needed epidural blood patch compared with 7 (15.9%) in the placebo group ($P < .001$). Patients required no > 2 doses of neostigmine/atropine. There were no between-group differences in neck stiffness, nausea, or vomiting. Complications including abdominal cramps, muscle twitches, and urinary bladder hyperactivity occurred only in the neostigmine/atropine group ($P < .001$).

Conclusion:

Neostigmine/atropine was effective in treating PDPH after only 2 doses. Neostigmine can pass the choroid plexus but not the blood–brain barrier. The central effects of both drugs influence both cerebrospinal fluid secretion and cerebral vascular tone, which are the primary pathophysiological changes in PDPH. The results are consistent with previous studies and clinical reports of neostigmine activity.



نوع البحث:

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