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### The efficacy of peritubal analgesic infiltration in postoperative pain following percutaneous nephrolithotomy – A prospective randomized controlled study

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**Objective:** To study the efficacy of peritubal infiltration of 0.25% bupivacaine in postoperative pain following percutaneous nephrolithotomy with percutaneous nephrostomy tube in general PCNL patients and PCNL patients with supracostal renal access.

**Patients and Methods:** A total of 105 PCNL patients were randomized into two groups, 53 patients receiving peritubal analgesic infiltration (study group) and 52 patients as the control group. Of the study group, the 23-gauge, 90 mm spinal needle was inserted up to the renal capsule under fluoroscopic guidance along the nephrostomy tube at 6 and 12 o'clock positions, then 0.25% bupivacaine was infiltrated into the nephrostomy tract 10 ml in each position. Postoperative pain as the primary outcome was assessed by using 0-10 point visual analogue scale at 1, 4, 12, 24 and 48 hours postoperatively. The secondary outcomes were the total postoperative morphine usage in 24 hours, time of the first analgesic demand and adverse effects.

**Results:** The average VAS pain at 1 and 4 hours after the operation in the study group were  $4.64 \pm 2.73$  and  $3.41 \pm 2.28$  compared with  $7.11 \pm 2.33$  and  $4.40 \pm 2.21$  in the control group ( $P < 0.001$  and  $0.026$ ), respectively. Doses of morphine usage for controlling postoperative pain and the first analgesic demand were significantly less and longer in study group. Of supracostal access; the average VAS pain at 1 hour after operation in the study group was  $5.36 \pm 2.87$  compared with  $7.22 \pm 2.15$  in the control group ( $P = 0.018$ ). Doses of morphine usage for controlling postoperative pain was  $4.92 \pm 2.96$  mg in study group and  $8.81 \pm 6.36$  in control group ( $P = 0.012$ ).

**Conclusion:** The peritubal local anesthetic infiltration with 0.25% bupivacaine is effective in alleviating immediate postoperative pain after percutaneous nephrolithotomy. This effect leads to less early postoperative pain (Less VAS score), less number of morphine usage and longer time of first analgesic requirement.