A Comparison of Continuous Femoral Nerve Block (CFNB/SA) and Continuous Femoral Nerve Block with Minidose Spinal Morphine (CFNB/SAMO) for Postoperative Analgesia after Total Knee Arthroplasty (TKA)

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Introduction

A large number of patients who undergo knee surgery experiences moderate to severe postoperative pain that interferes with participation in early physical therapy**.** Most previous studies comparing peripheral nerve block (PNB) with epidural analgesia (EA) for major knee surgery have demonstrated comparable analgesia and improvement in side-effect profile associated in PNB**.** Unsatisfactory analgesia with FNB alone was reported and the additional benefit of sciatic block to CFNB was not conclusive. The aim of the present study was to find the benefit of the additional mini-dose spinal morphine (0.035 mg) to CFNB for postoperative pain control and to compare their associated side effects after total knee arthroplasty (TKA).

Materials and Methods

After written informed consent and with Institutional Ethics Committee approval, 68 ASA physical status I-III patients scheduled for elective unilateral TKA under spinal anesthesia (SA) were included in the present prospective, randomized controlled study. The patients were allocated into two groups. CFNB was placed in all patients by the inguinal paravascular approach, 19 G, 50 mm needle. After negative aspiration, 20 ml of 0.25% levobupivacaine was administrated. SA was done in lateral position at L3-4, 27 G needle. Group I (CFNB/SA), SA with 2.8 ml levobupivacaine. Group II (CFNB/SAMO), SA with 2.8 ml levobupivacaine plus morphine 0.035 mg.

At Postanesthesia Care Unit (PACU), pain, and other adverse effects such as nausea, vomiting, pruritus, dizziness, hypotension, numbness, and motor blockade were recorded every 15 min. Pain was assessed by visual analog scale (VAS 0-10, 0 = no pain, 10 = worst pain). Tramadol 50 mg IV was given if the VAS > 4. In the ward, patients in both groups were maintained by continuous femoral infusion of 0.125% levobupivacaine rate 7 ml/hr for

24 hr post-op and then reduced to 5 ml/hr if VAS ≤3. The femoral catheters were removed at 48 hr post-op.

Results

Patient's demographics data in each group were not different. At PO12-24hr, the VAS scores were significantly lesser in the CFNB/SAMO group compared with the CFNB/SA group. Cumulative tramadol IV requirement for PO48hr were significantly lesser in the CFNB/SAMO group compared with the CFNB/SA group**.** Nausea vomiting and numbness were significantly greater in the CFNB/SAMO group during early postoperative period (PO1-6hr).

Conclusion

Satisfactory analgesia with CFNB alone for TKA may be inadequate. The additional sciatic block to CFNB seems to be unadvised due to additional time, cost and skilled required. The mini-dose intrathecal morphine (0.035 mg) in addition to CFNB was found to be effective for managing postoperative pain after TKA with minimal side effects.