

**PE-58. INTRAARTICULAR ANALGESIA FOR AMBULATORY ARTHROSCOPIC KNEE SURGERY**Reuben, S.S.<sup>1</sup>; Hickman, G.<sup>2</sup>

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**Introduction:** Arthroscopy of the knee has spared patients large incisions and decreased morbidity compared with those of open incisions, but has not eliminated pain (1). Most of the intraarticular (IA) structures of the knee have free nerve-endings and are capable of sensing painful stimuli and producing severe pain (2). IA local anesthetics and opioids may provide significant pain relief following arthroscopic knee surgery (3). Recent evidence suggests that the preoperative administration of analgesics may be more effective in reducing hyperalgesia and postoperative pain (4). The preoperative administration of IA local anesthetics and/or opioids can provide for enhanced analgesia (5). The goal of our study was to evaluate the optimal combination and timing of administering IA bupivacaine and/or morphine.

**Methods:** 204 patients undergoing arthroscopic meniscectomy were included in this study. All patients received general anesthesia with N20 in O2, desflurane, and fentanyl 150 mcg. Patients received one of five treatment protocols: Group 1 (n=63) received no IA injections; Group 2 (n=47) received 30 mL IA bupivacaine 0.5% postoperatively; Group 3 (n=24) received 1% lidocaine infiltration to the portals preoperatively and 30 mL IA bupivacaine 0.25% postoperatively; Group 4 (n=12) received 30 mL IA bupivacaine 0.25% and morphine 5 mg postoperatively; Group 5 (n=58) received 30 mL IA bupivacaine 0.25% and morphine 5 mg both pre- and postoperatively. In the PACU, upon first report of pain, patients were administered either morphine (MS) 5 mg IV q 10 min or meperidine 25 mg IV q 10 min. Patients were discharged home when they were oriented to time and place, were able to void, had stable vital signs, and could ambulate with the assistance of crutches.

**Results:** Total opioid use is expressed in MS equivalence (meperidine 75 mg = morphine 10 mg). Significantly fewer patients in Group 5 required postoperative opioids (26%, 6.5 mg MS) compared to Group 1 (79%, 8.6 mg MS)(P<0.0002), Group 2 (62%, 7.6 mg MS)(P<0.0001), Group 3 (54%, 7.6 mg MS)(P<0.01), or Group 4 (92%, 10.6 mg MS)(P<0.0001). In addition, patients in patients in Group 5 had a shorter time to discharge (41 min) compared to Groups 4 (64 min) and 2 (50 min).

**Conclusion:** The administration of bupivacaine and morphine is most effective when injected both in the pre- and postoperative period for patients undergoing ambulatory arthroscopic knee surgery.

1. Highenboten CL, et al. *Am J Sports Med* 1993;21:503-6.

2. Dye SF, et al. *Am J Sports Med* 1998;26:773-7.

3. Reuben SS, et al. *J Bone Joint Surg* 2000;82:1754-66.

4. Woolf CJ, et al. *Anesth Analg* 1993;77:362-79.

5. Reuben SS, et al. *Anesth Analg* 2001;92:923-6.

	Opioid Use (%)	Morphine Use (mg)	Discharge Time (min)
Group 1	80 %	8.6	43
Group 2	62 %	7.6	50
Group 3	54 %	7.6	43
Group 4	92 %	10.6	64
Group 5	26 %	6.5	41