Concurrent Session I-A

Research

The Efficacy of Continuous Bupivacaine Infiltration for Pain Management Following Orthopedic Knee Surgery: Anterior Cruciate Ligament (ACL) Reconstruction and Total Knee Arthoplasty (TKA)

Objectives:

- Define the concept of preemptive analgesia
- Determine safe dosing using infiltration analgesia
- Use and understand a pain assessment tool

Beverly A. Morris, MBA, RN, CNP
Pam Pulido-Thompson, BSN, RN
Mary E. Hardwick, MSN, RN
Scripps Clinic
La Jolla, CA

Concurrent Session #0210
Friday, March 2, 2001
11:15 a.m. – 11:45 a.m.

THE EFFICACY OF CONTINUOUS BUPIVACAINE INFILTRATION FOR PAIN MANAGEMENT FOLLOWING ORTHOPAEDIC SURGERY: ACL RECONSTRUCTION AND TKA

Beverly A. Morris, RN, CNP, MBA; Director of Research and Development, Division of Orthopaedic Surgery, Scripps Clinic, La Jolla, California.
Pam Pulido-Thompson, RN, BSN; Orthopaedic Research Specialist, Scripps Clinic, La Jolla, California.
Clifford W. Colwell, Jr, MD; Head, Division of Orthopaedic Surgery, Scripps Clinic, La Jolla, California.
Heinz R. Hoenecke, Jr, MD; Division of Orthopaedic Surgery, Scripps Clinic, La Jolla, California.

Introduction: Postoperative pain is under-treated and poly-pharmacied regardless of surgical procedure and patient's age. Assessment and management of pain is an important part of nursing practice and a focus of JCAHO mandate for 2000. No previously published randomized studies evaluate the effectiveness of continuous administration of a local anesthetic for patients having Anterior Cruciate Ligament (ACL) reconstruction and Total Knee Arthroplasty (TKA). **Purpose**: The aim is to examine continuous low dose infiltration of a local anesthetic into the postoperative wound for 36-48 hours. Recovery is enhanced by diminishing the need for narcotics or other analgesics, eliminating adverse events, and lowering anxiety and pain levels. **Methods**: Forty-six patients prospectively randomized into two blinded studies compared the new technique of continuous infiltration of bupivacaine(a local anesthetic) with placebo via an elastomeric pump catheter. Standard use of oral, IM, and PCA analgesics were continued throughout the postoperative period. Parameters measured included: pain and pain relief visual analog scale(VAS) assessments, total narcotic consumption while the pump remained in place, and complications. Student t-test assuming unequal variances with results reported as statistically significant for p values < 0.05 were used for data analysis. **Findings**: Results demonstrated bupivacaine groups in both studies utilized fewer narcotics and was statistically significant ($P<0.05$) in the TKA study. Pain and pain relief scores were statistically significantly in the ACL group using bupivacaine ($P<0.05$). There were no complications. **Conclusion:** Continuous infiltration of bupivacaine is a safe and effective method of improving postoperative pain management in ACL and TKA surgery. In addition, the outpatient ACL patient is able to manage the pain pump apparatus safely and in 54% of the time able to remove it at home. As the assessment and management of pain continues to be an important domain of nursing practice, the findings from these two studies provides new information to the nurse managing postoperative pain.