### SINGLE DOSE PREOPERATIVE GABAPENTIN AND ACETAMINOPHEN

Team Leader: Katrina Push, RN

Veterans Administration Healthcare System, Ann Arbor, Michigan

Team Members: Ann Arbor Veterans Administration PACU Nursing Staff

#### **BACKGROUND INFORMATION:**

Pain control is an important issue in our PACU. Finding the balance between adequate pain control and patient satisfaction without over sedation has been our goal. The PACU staff worked closely with anesthesia to develop a quality improvement project that addressed these issues.

## **OBJECTIVES OF PROJECT:**

Our objective was to determine whether the oral use of Gabapentin and Acetaminophen preoperatively would decrease pain and opioid use in surgical patients undergoing general anesthesia.

#### PROCESS OF IMPLEMENTATION:

The nursing staff in the PACU worked with anesthesia to develop protocols to determine which patients were appropriate for the preoperative gabapentin/acetaminophen dose. The nursing staff recorded patient pain levels preoperatively, at discharge or transfer from the PACU and 24 hours after discharge. Data was compared from the previous 12 months of patients who did not receive the combination Gabapentin/Acetaminophen to the current 12 months of patients receiving the combination.

#### STATEMENT OF SUCCESSFUL PRACTICE:

Preoperative Gabapentin and Acetaminophen was successfully implemented in the PACU. The positive results encouraged staff to share this information by holding in-services to inpatient unit managers to let them know the successful results and to educate them on alternative options for pain control.

# IMPLICATIONS FOR ADVANCING THE PRACTICE OF PERIANESTHESIA NURSING:

Since implementation of preoperative gabapentin and acetaminophen there have been no occurrences of over sedation. Previous data showed an increase in postoperative pain of 48% from their preoperative level while the Gabapentin/Acetaminophen group showed a decrease of 10% postoperatively. In addition there was a decrease in post-operative opioid use of 11% oral opioids and 19% in IV opioids. Other results showed the outpatient length of stay decreased as well as postoperative nausea and vomiting.

# Reference List

- 1. Ho KY, Gan TJ, Habib AS. Gabapentin and postoperative pain—a systematic review of randomized controlled trials. Pain 2006; 126:91–101
- 2. Seib RK, Paul JE. Preoperative gabapentin for postoperative analgesia: a meta-analysis. Can JAnaesth. 2006;53:461–9
- 3. Clarke H, Bonin RP, Orser BA et al. The prevention of chronic postsurgical pain using gabapentin and pregabalin: a combined systematic review and meta-analysis. <u>Anesth</u> Analg. 2012; Aug;115(2):428-42
- 4. Tiippana EM, Hamunen K, Kontinen VK, Kalso E. Do surgical patients benefit from perioperative gabapentin/pregabalin? A systematic review of efficacy and safety. Anesthesia and Analgesia 2007;104(6):1545-56
- 5. Leung JM, Sands LP, Rico M, Petersen KL, Rowbotham MC, Dahl JB, Ames C, Chou D, Weinstein P. Pilot clinical trial of gabapentin to decrease postoperative delirium in older patients. Neurology. 2006;67:1251–3
- 6. Toms L, McQuay HJ, Derry S, Moore RA. Single dose oral paracetamol (acetaminophen) for postoperative pain in adults. Cochrane Database Syst Rev 2008:CD00460
- 7. Barden J, Edwards J, Moore A, et al. Review: single dose, oral paracetamol reduces moderate to severe postoperative pain. Evid Based Nurs 2004; 7:84.
- 8. <u>Syal K</u>, <u>Goma M</u>, <u>Dogra RK</u> "Protective premedication": a comparative quality improvement project of acetaminophen, gabapentin and combination of acetaminophen with gabapentin for post-operative analgesia <u>J Anaesthesiol Clin Pharmacol</u>. 2010 Oct;26(4):531-6.
- 9. Reference to be determined for VA-DoD / APS / ASA postoperative pain guideline
- 10. Chung F. Discharge criteria—a new trend. Can J Anaesth. Nov; 42(11):1056-8.
- 11. Holmer Pettersson PH, Owall A, Jakobsson J. Early bioavailability of paracetamol after oral or intravenous administration. Acta Anaesthesiol Scand 2004; 48:867-70.
- 12. Singla NK, Parulan C, Samson R, Hutchinson J, Bushnell R, Beja EG, et al. Plasma and cerebrospinal fluid pharmacokinetic parameters after single-dose administration of intravenous, oral, or rectal acetaminophen. Pain Pract (2012) 12:523–32.