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Pre-Printed Beta Blocker Orders and Nursing Education Reduces Atrial Fibrillation After Cardiac Surgery

BACKGROUND: Atrial fibrillation is a common occurrence after cardiac surgery, occurring in up to 35% of coronary artery bypass patients and in more than 50% of valve surgeries (Funk, et al., Incidence, Timing, Symptoms and Risk Factors for Atrial Fibrillation After Cardiac Surgery, American Journal of Critical Care, September 2003, 12:5). In addition to increasing length of stay and cost of hospitalization, atrial fibrillation is associated with a significant increase in morbidity post cardiac surgery (Ellis, Atrial Fibrillation Following Cardiac Surgery, Dimensions in Critical Care Nursing, September 1998). According to the American Heart Association, atrial fibrillation is the most powerful and treatable cardiac precursor of stroke (AHA Prevention Conference IV: Prevention and Rehabilitation of Stroke--Risk Factors Executive Summary, 1997). The purpose of this quality improvement project was to increase rate of beta blocker administration through standardization of orders and education of nursing staff regarding the role of beta blockers in atrial fibrillation prophylaxis.

METHODS: All patients undergoing cardiac surgery were eligible for this study. No patients were excluded from prospective data collection. Beta blockers were begun (or continued) on all patients scheduled for cardiac surgery unless there was a contraindication to their use. In order to increase administration, orders for beta blockers were added to the pre-operative orders and beginning post extubation were included on the pre-printed orders. It had been identified that nursing staff were holding beta blockers frequently, so set parameters for holding for blood pressure and heart rate were included within the orders. Nursing staff in all areas of the hospital caring for cardiac surgery

patients participated in a one hour educational program highlighting the role of beta blockers in arrhythmia suppression. The Society of Thoracic Surgeons National Database was utilized to extract and analyze prospective data.

RESULTS: In 2002, the incidence of atrial fibrillation was 27% (70/258) for all patients undergoing cardiac surgery at our facility. After implementation of pre-printed cardiac surgery orders and completion of the education process for the nursing staff during the first quarter of 2003, incidence of atrial fibrillation was decreased to 19% (57/286), with a low of 14% during the third quarter of 2003.

CONCLUSION: Implementation of pre-printed beta blockers and nursing education on the role of beta blockers in atrial fibrillation prophylaxis resulted in significant improvement in post-operative atrial fibrillation rates. Continued monitoring of the atrial fibrillation rate will be necessary to assure that this quality improvement is sustained. Further research should address contraindications to beta blocker administration and the incidence of atrial fibrillation in the population who did not receive beta blockers vs. the population who did receive beta blocker administration.

