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A909

TITLE: Quality Assurance Data Obtained from Every Anesthetic with a Self-Completed Check-Off Data Sheet

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Anesthesiologists, like all other specialists, need quality assurance tools to study their own practices, direct their continuing medical education efforts and to study the subtle effects of anesthetics on patient outcomes. In the past, medical records technicians have helped anesthesiologists by locating for review the most serious patient outcomes, such as death or cardiac arrest. These catastrophic outcomes are not only rare, but are usually not related to anesthetic preparation or care. Less dramatic adverse patient outcomes are difficult to locate or study.

It would seem useful for anesthesia providers to begin more detailed systematic recording of events occurring during anesthetics, both those anesthetics with an adverse outcome, and those with no apparent adverse patient outcome. For instance, when a patient dies or arrests in the OR, the anesthetic record may reveal prolonged attempts at controlling hypotension preceding the event. How often are such blood pressure control maneuvers performed with no adverse patient outcome? For what kind of patients? During what operations? Answers to these and other questions are needed in order to examine what are often assumed to be "cause and effect" relationships.

The major point of difference in the quality assurance data collection system tested here, is its ability to provide the denominator of anesthetic cases which definitely did or did not have a specific event occur. We used a sixty-item check list completed at the end of each anesthetic by the in-room provider who is in the best position to know whether or not any of the events occurred (e.g. bronchospasm, temporary esophageal intubation). The 60 items are arranged in logical categories of anesthetic management, and providers quickly become able to use the check sheet at the conclusion of each anesthetic. Patient demographic data, such as ASA category and type of surgery, is then combined with the observations of the anesthesiologist to build a data base using a powerful and flexible relational data base management software program[1]. This allows for rapid retrieval of data and the ability to investigate any anesthetic occurrence in relation to actual patient outcomes.

In order to investigate the accuracy of our data, we looked at our incidence of failed intubations to compare this with data already in the literature. In seven months of data collection, involving a total of 4563 cases, we observed inability to intubate six patients among 2753 general anesthetics. This incidence of 0.22%, or 2.2/1000 patients compares with an incidence of 0.08% or 0.8/1000 patients, reported by Samsoon[2]. We also examined the "wet tap" rate during epidural anesthetics in our operating room and in our obstetric population. The wet tap rate for operating room patients, out of a total of 845 patients was 3.9%. In the obstetric suite, the wet tap rate in 599 patients was 2.5%. Our rates compare with the reported 1-7% wet tap rate reported by others.[3]

We are encouraged by the similarity of our concurrent observations to those reported in retrospective studies. This correlation lends credence to the accuracy of self-observation and reporting that can be done by the anesthesia provider. Most of the anesthetic events we are now monitoring have not been previously reported as actual incidence rates. We will be able to examine the incidence rates of many subtle and otherwise unrecorded events which occur during anesthesia. These data can then be examined for clues to actual adverse patient outcomes, for the profiling of normal anesthetic practice, and for data to guide continuing educational efforts of departments and practitioners.

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A910

TITLE: TRANSDERMAL FENTANYL FOR POSTOPERATIVE PAIN RELIEF AFTER ABDOMINAL HYSTERECTOMY

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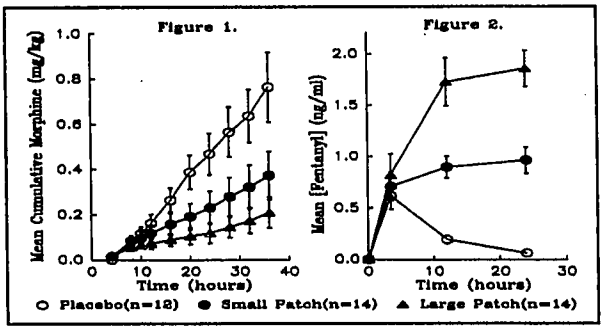
INTRODUCTION. The purpose of this study was to assess the safety and efficacy of transdermal fentanyl for postoperative pain relief. Previous studies have reported low[1] and high[2] incidences of side effects. Others have correlated patch delivery rate with plasma fentanyl concentrations.[3]

METHODS. After IRB approval and informed consent, forty ASA I or II patients scheduled for hysterectomy were enrolled. The patients were randomly divided into three groups in this prospective double-blind study. Group L (n=14) received an active 60 cm^2 fentanyl patch delivering 90-100 $\mu g \cdot h^{-1}$, group S (n=14) received an active 40 cm^2 fentanyl patch delivering 60-80 $\mu g \cdot h^{-1}$, and group P (n=12) received placebo patches. Patches were applied to the chest one hour prior to surgery and remained in place for 24 h. Monitoring continued for 36 h. Patient-controlled analgesia (PCA) morphine was available to all three groups. Each group was then analyzed for PCA usage, visual analogue pain intensity scores (VAPS), comfort, sedation, vital signs, patient global assessment (PGA) of analgesia, trained observer global assessment (OGA) of analgesia, plasma fentanyl levels, and adverse events.

RESULTS. There were no significant differences ($p>.05$) among the groups with respect to age, weight, race, VAPS, comfort, sedation, vital signs, PGA, OGA, fentanyl levels by age or race, nausea (12/40 patients), vomiting (12/40), pruritus (8/40), O_2 desaturation (8/40), or respiratory depression. Significant differences were found for: mean (±SE) cumulative morphine use for group P versus groups S ($p<.04$) and L ($p=.0007$; figure 1), and mean plasma fentanyl levels ($p<.0001$; figure 2). No clinically significant laboratory abnormalities or shifts were detected. One patient in group L experienced treatable respiratory depression in the Post Anesthesia Care Unit after an intraoperative protocol violation. The patient was discontinued from the study 7.5 h post-patch placement.



CONCLUSIONS. Large and small transdermal fentanyl patches significantly reduced morphine usage. 24 h mean fentanyl levels were similar to those in previous studies with patches that deliver equivalent fentanyl doses. Although the incidence of nausea/vomiting, pruritus, or SaO2 was not significantly different among the 3 groups, a large number of patients developed these side effects due to the combined effects of sustained plasma fentanyl concentrations and supplemental morphine.

REFERENCES.
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