

282: Quality indicators to monitor post-operative pain

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Objective:

To select a few indicators to monitor the quality of post-operative pain management by identifying linkages between process and outcome defined as severe post-operative pain (POP) and patient satisfaction.

Methods:

A cross-sectional observational study was performed in 18 adult departments of surgery in 5 French teaching hospitals of the Assistance Publique-Hôpitaux de Paris. All patients were included in the survey (except ambulatory surgery - up to 30). Medical records audits were performed according to a set of explicit criteria: PACU-surgery department transmission, analgesics ordered, analgesics administered, the use of protocols, frequency of pain assessment, pain severity etc. Structured patient interviews were organised between 24 to 72h after surgery to assess outcomes: POP severity was measured on a 0 to 10 visual numerical scale; satisfaction was measured on 6 levels using a verbal rating scale (from very satisfied to very unsatisfied).

Analysis: the outcome indicators were identified as the proportion of patients with severe POP (defined on a numeric scale > 4) and the proportion of patients reporting high levels of satisfaction. The criteria for risk adjustment were identified by logistic regression. The links between each process and outcome were analysed after adjusting for confounding factors. Those results were then used to develop indicators of POP management.

Results:

625 patients were observed. 42% suffered from severe POP, 37% suffered from POP during nursing acts. Patient satisfaction and POP were associated: 67% of patients who suffered from POP were satisfied, whereas 86% of patients without POP were satisfied ($p < 0.0001$). Patients characteristics linked to post-operative pain (POP) were: the act of surgery ($p < 0.001$) and mental pain ($p < 0.005$). Pre-operative information on pain management and mental pain (0.001), and pain experienced during previous surgery ($p < 0.01$) were associated with patient satisfaction. Pain measurement before leaving PACU ($p < 0.05$) and the use of protocols ($p < 0.05$) were linked with POP. Pain assessment and monitoring were linked but there was bias indicated: the more the patients suffered from pain, the more the nurses measured pain. Patient information before surgery ($p < 0.001$) was associated with patient satisfaction. Analysis of analgesics prescription and administration: in the fifth hospital studied, among the 142 out of 298 patients that suffered from POP, 12% received the ordered treatment but didn't have opioid analgesics ordered and 64% didn't receive all the analgesics ordered.

Additional indicators were then defined:

- *Specific outcome indicators:*
 - Proportion of patients suffering from pain who didn't have opioid analgesics prescribed;
 - proportion of patients suffering from pain who didn't receive all the analgesics ordered;
 - proportion of patients who suffered from pain during nursing acts.
- *Process indicators:*
 - Frequency of pre-operative patient information on pain management ; frequency of pain measurement before leaving PACU; frequency of pain assessment at return time in surgery department ; frequency of pain measurement at least every 8 hours the first day after surgery ; ratio administered analgesics / ordered analgesics.

Conclusions:

We defined the risk adjustment strategy for outcome indicators. The criteria associated with outcome, and the analysis of prescription / administration were used to define 5 process indicators and 3 specific outcome indicators to monitor POP management, in addition to the indicators that have been already defined (POP frequency and patient satisfaction). Further work is needed to assess if those indicators are able to monitor variations in quality levels of POP while implementing a quality improvement program.