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Short Communication

Survey of Patient Factors Associated with Postoperative Nausea and Vomiting Caused by Intraoperative Opioid Use

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Abstract

Introduction: We report the results of a survey of patient factors associated with postoperative nausea and vomiting in patients who received morphine as an intraoperative opioid and fentanyl for postoperative patient-controlled analgesia.

Materials and methods: Ninty-two patients who underwent orthopaedic surgery in combination with administration of opioids. There were 25 men and 67 women, including 40 patients with osteoarthritis (OA), 18 with rheumatoid arthritis (RA), 8 with femoral head necrosis, 13 with spinal disease, and 13 with osteoporosis. We recorded age, gender, body mass index (BMI), drinking status, and smoking status in patients who experienced nausea or vomiting after surgery.

Results and Discussion: 29.3% experienced nausea or vomiting. Women, without a drinking and a smoking history are risk for symptoms against men, with drinking and a smoking history. However, this survey showed no significant differences in age, BMI, diseases.

Conclusion: Adverse reactions are difficult to predict prior to surgery, but may be prevented by obtaining drinking and smoking histories in advance.

Keywords: *Orthopaedic surgery; Post-operative pain; Opioid; Nausea; Vomiting*

Abbreviations: Postoperative patient-Controlled Analgesia (PCA); Osteoarthritis (OA); Rheumatoid Arthritis (RA); Body Mass Index (BMI).

Introduction

Perioperative pain control affects subsequent rehabilitation, and is important for early discharge from the hospital and return to usual activities [1]. We previously reported that nausea and vomiting caused by weak opioids are associated with drinking and smoking [2]. We here report the results of a survey of patient factors associated with postoperative nausea and vomiting in patients who received morphine as an intraoperative opioid and fentanyl for postoperative patient-controlled analgesia (PCA).

Material and Methods

This survey included 92 patients who underwent joint replacement or spinal operations (1- 7 days after admission, average (2.3 ± 2.4) in combination with administration of opioids at our hospital. There were 25 men aged 68, 12.5 years and 67 women aged 71, 14.2 years, including 40 patients with osteoarthritis (OA), 18 with rheumatoid arthritis (RA), 8 with femoral head necrosis, 13 with spinal disease, and 13 with osteoporosis. We recorded age, gender, body mass index (BMI), drinking status, (over 3 days/week), and smoking status (over

5 days/week) in patients who experienced nausea or vomiting after surgery. In this study, we did not use prophylactic agents anti-nausea and /or vomiting for all patients and after operative pain controlled NSAIDs first.

Results and Discussion

Averaged drinking and smoking status were 42 ± 15years. Of the 92 patients (type of anesthesia: general were 35, spinal with gas28 and spinal 27), 27 (29.3%) experienced nausea or vomiting (in general11/35, spinal with gas 9/28 and spinal 7/27). More women (88.9%) had symptoms than men. There were 21 patients without a drinking history (77.8%) and 16 without a smoking history (59.3%). Of the 65 patients without any episodes of nausea or vomiting (70.6%), 14 (21.5%) had no drinking history and 4 (6.2%) had no smoking history. Significant differences were observed in the incidence of nausea/ vomiting between the patients with and without drinking and smoking histories (p 0.01). However, this survey showed no significant differences in age, BMI, diseases, type of anaesthesia and surgical procedures, although the proportions of elderly patients and RA patients were greater.

Nausea/vomiting	Present	Absent
Total case numbers	27 patients (29.3%)	65 patients (70.6)
Women	24 patients (88.9%)	43 patients (66.2) *
Men	3 patients (11.1%)	22 patients (88%) *
Smoking history	11 patients (40%)	41 patients (63%)
	16 patients (59%)	24 patients (36.9%) *
Drinking history	6 patients (22%)	51 patients (78.5%) *
	21 patients (78%)	14 patients (21.5%) *
BMI	25.0 ± 4.3	24.6 ± 6.2
Age	77.3 ± 7.5	70.4 ± 14.6
		*; p ≤ 0.01

Table 1: *Comparison for patient backgrounds associated with post-operative nausea and vomiting.*

Nausea/vomiting	Present	Absent
OA	12 patients (30%)	28 patients (70%)
RA	6 patients (33.3%)	12 patients (66.7%)
Spinal disease	3 patients (23%)	10 patients (76.9%)
Osteoporosis	3 patients (23%)	10 patients (76.9%)
Femoral head necrosis	3 patients (37.5%)	5 patients (62.5%)

Table 2: *Comparison for patient diseases associated with post-operative nausea and vomiting.*

Constipation, nausea/ vomiting, and somnolence are major adverse reactions to opioids [3]. Nausea and vomiting are induced at lower doses than the effective analgesic dose by stimulation of the vomiting center in the medulla. Although the elderly, women, and under-weight patients are generally considered to be at high risk, the results of this survey showed no differences in age and BMI. However, the incidence of nausea and vomiting was associated with gender, drinking history, and smoking history [4]. Perioperative pain relief affects not only rehabilitation but also surgical outcomes [5,6]. Despite the implementation of PCA, there is a possibility that patients at high risk may develop aspiration pneumonia. Thus, measures against nausea and vomiting should be taken. Adverse reactions are difficult to predict prior to surgery, but may be prevented by obtaining drinking and smoking histories in advance.

Conclusion

Adverse reactions are difficult to predict prior to surgery, but may be prevented by obtaining drinking and smoking histories in advance.

Bibliography

1. Fanelli A Sorella., *et al.* "Ionophoretic transdermal fentanyl for the management of acute perioperative pain in hospitalized patients". *Expert Opinion on Pharmacotherapy* 17.4 (2016): 571-577.

2. W Shimada., *et al.* "Alcohol intake improves adherence of pregabalin and tramadol/acetaminophen to RA and OA patient". *Rheumatology: Current Research* S5 (2014): 005.

3. Porreca F and Ossipov MH. "Nausea and vomiting side effects with opioid analgesics during treatment of chronic pain: mechanisms, implications and management options". *Pain Medicine* 10.4 (2014): 654-662.

4. Chiang T. "Opioid Pharmacology in Relation to Alcohol Behaviors". Handbook of Experimental Pharmacology. 2016.

5. Thomazeau J., *et al.* "Acute pain Factors predictive of post-operative pain and opioid requirement in multimodal analgesia following knee replacement". *European Journal of Pain* 20.5 (2016): 822-832.

6. Vaid P., *et al.* "Low-Dose Ketamine Infusions for Highly Opioid-Tolerant Adults Following Spinal Surgery: A Retrospective Before-and-after Study". *Pain Management and Nursing* 17.2 (2014): 150-158.

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