

Pain control after surgery: a survey of current practice

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Summary

A questionnaire was sent to 302 qualified nurses in an attempt to elicit their current practice of administering postoperative analgesics, knowledge of the drugs, opinions regarding prescribing habits and comments on how pain control could be improved; 211 nurses replied (70% response).

Knowledge was good but practice poor in that 56% give less than six doses postoperatively and the majority of nurses do not give analgesics until the patient is in pain; 66% thought the amount of analgesic given was a poor indication of pain experienced; 62% felt that prescribing by doctors was inconsistent and 90% thought it could be improved. Deficiencies in communication between anaesthetists, nurses and patients were highlighted. The nurses wished for more involvement in pain management and for more education of patients preoperatively. A selection of comments is included and possible simple methods for improving pain control are discussed.

Introduction

The effectiveness of control of pain after surgery is notoriously difficult to assess. This is partly due to the insoluble problem that 'in no symptom are patients more inconsistent and unreliable' (1). More important, the poor control of pain may be attributed to uniformed prescribing (2), the fact that analgesics prescribed are not given (3), and that optimal pain relief is not aimed at. This is reflected in the high proportion of patients (41–75%) who still experience moderate to severe pain postoperatively (2–4).

As it is the nurses who almost exclusively administer the analgesics, they are in the best position to assess the effectiveness or otherwise of analgesic regimens. The aim of this survey was to collect information regarding the nurses' attitudes, practice, knowledge of pain relief and the drugs they are using, together with their suggestions as to how pain control could be improved.

Methods

The survey was directed to all qualified nursing staff in the Lancaster and Kendal districts involved with patients on surgical wards ($n = 302$). It took the form of a questionnaire consisting of 32 questions, 22 of which were of the 'Yes/No/Do not know' type and the remainder involved inserting numbers into blank boxes. Space was available for adding comments and opinions.

A letter of explanation was included with each questionnaire, saying that the aim was to gain more information about the practice of pain control. A self-addressed envelope was supplied and all the questionnaires returned anonymously.

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The Editor would welcome any comments on this paper by readers

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The questions were regrouped after analysis and could be divided into five categories: knowledge of analgesics, practice of administration, problems of organisation, deficiencies in prescribing, and assessment of efficacy.

Results

Of the 302 questionnaires distributed, 211 were returned and proved suitable for analysis (70% response). The status of the nurses was: nursing officer (3%), sister (26%), staff nurse (40%) and enrolled nurse (31%).

KNOWLEDGE OF ANALGESICS

There was good agreement in that 90% thought an intramuscular analgesic to be effective for between 2–4 hours, and 78% that the maximum effect after injection was from $\frac{1}{2}$ –2 hours. There was less consistency on the length of time during which a patient should be given intramuscular analgesics, ranging from 24 hours (11%), 36 hours (13%), 48 hours (50%) to 72 hours (12%). Only 7% answered that they should be given for as long as the patient required. In contrast, to the question, 'What is the maximum number of doses that you can give?', 21% replied less than 4 doses, 27% thought 6–8 doses and only 13% would give 10 doses or above; 22% said 'as prescribed' and 17% did not know. This may reflect, despite figures to the contrary (4), the fact that 26% of nurses had reservations that the analgesics given may cause addiction.

In answer to which vital sign was most affected by intramuscular analgesics, 79% thought blood pressure, 10% pulse rate and 11% respiratory rate. The emphasis on blood pressure may be one explanation for reluctance to administer analgesics after surgery. The low importance accorded to respiratory rate was shown also by the response to the question, 'What respiratory rate would cause enough concern to call a doctor?'; 14% did not know, 22% said less than 16 per minute, 20% less than 12 and 31% less than 10. These figures are perhaps a reflection on how rarely respiratory rate is actually measured.

In a more searching question, but relevant to the modern trend for the more extensive use of epidural analgesia with its attendant dangers (5), the nurses were asked if it is appropriate to give intramuscular analgesics to a patient still in pain who has an epidural catheter in place for pain relief; 29% said yes, 21% answered no and 50%, perhaps understandably, did not know.

PRACTICE OF ADMINISTRATION

Fifty-seven per cent replied that they would not give prescribed analgesics when the patient is not in pain (38% said yes and 5% did not know). This is consistent with other

POSTOPERATIVE PAIN CONTROL - QUESTIONNAIRE - RESULTS (PERCENTAGES) n=211

STATUS: Nursing officer 3% Sister 26 Staff Nurse 40 Enrolled nurse 31

- 1) For how many hours do you think an intramuscular analgesic is effective?

2	4	6	hours
20	70	10	%
- 2) For how long should a patient be given intramuscular analgesia?

24	36	48	72	hrs
11	13	50	12	%

Until oral: 7
As long as req: 7
- 3) What is the maximum number of doses that you can give?

4	6	8	10	doses
21	13	14	13	%

As prescribed: 22
Don't know: 17
- 4) When is the maximum effect of an intramuscular analgesic after injection?

15	30	60	90	120	180	min
6	19	32	18	9	2	%

Don't know: 14
- 5) What respiratory rate per minute would concern you enough to call a doctor?

4	6	8	10	12	14	16	20	min
2	7	22	20	15	7	12	%	

Blood pressure: 79
Pulse rate: 10
Respirations: 11
- 6) Which of the following do you find most affected by intramuscular analgesics?

YES	NO	DON'T KNOW
29	21	50
- 7) Is it alright to give prescribed intramuscular analgesics to a patient who is still in pain and has an epidural catheter in place, used for pain relief?

YES	NO	DON'T KNOW
26	61	13
- 8) Do you have any reservations that the intramuscular analgesics you give may cause addiction?

YES	NO	DON'T KNOW
38	57	5
- 9) Would you give a prescribed analgesic when a patient is not in pain?

YES	NO	DON'T KNOW
78	18	4
- 10) Do you offer postoperative analgesia more often than the patient requests it?

YES	NO	DON'T KNOW
84	11	5
- 11) Do you find it beneficial to give an anti-emetic with intramuscular analgesics?

YES	NO	DON'T KNOW
84	15	1
- 12) Do you find it helpful to have the analgesic as a variable prescription (eg. 10-20 mg), so you can use your discretion?

YES	NO	DON'T KNOW
16	79	5
- 13) Do you often use intramuscular analgesics more as a night sedation?

YES	NO	DON'T KNOW
52	38	10
- 14) In your opinion, do some patients prefer to suffer the pain from the operation, than suffer the pain from an intramuscular injection?

YES	NO	DON'T KNOW		
4	6	8	10	doses
34	22	11	5	%

Don't know: 28
- 15) What do you find is the average number of injections for pain that a patient receives after an abdominal operation?

0	1	2	3	4	hours
13	21	23	14	7	%

Don't know: 22
- 16) How long after returning from theatre does the patient usually have the first postoperative analgesic injection?

YES	NO	DON'T KNOW
38	59	3

- 17) Does the ward staffing situation affect the amount of analgesia given?

YES	NO	DON'T KNOW
38	59	3
- 18) Do you feel the patient should be told more about pain relief before having the operation?

YES	NO	DON'T KNOW
76	13	11
- 19) Do you find that intramuscular analgesics are given mostly at times which are convenient?

YES	NO	DON'T KNOW
29	60	11
- 20) Would you give a "non-controlled drug" (eg. Fortral) more readily than a controlled drug.

YES	NO	DON'T KNOW
19	64	17
- 21) Do you feel that the nursing staff have enough say in the management of postoperative pain?

YES	NO	DON'T KNOW
38	50	12
- 22) Could you imagine a time when suitably trained nurses could "top-up" epidurals for patients on the ward for pain relief?

YES	NO	DON'T KNOW
46	28	26
- 23) Do you find the prescribing of analgesics (eg. dosage, number of doses) consistent among the doctors?

YES	NO	DON'T KNOW
35	62	3
- 24) Do you find that analgesics given by the anaesthetist in theatre are clearly and adequately noted and passed on to the ward staff?

YES	NO	DON'T KNOW
33	57	10
- 25) Do you find that anaesthetists usually visit their patients postoperatively, and review the analgesia?

YES	NO	DON'T KNOW
29	49	22
- 26) Do you think that the prescribing of analgesics by doctors could be improved?

YES	NO	DON'T KNOW
90	6	4
- 27) If so, how?

Clearer writing	66
Larger dosage	10
More effective drugs	32
More doses	13
Shorter time interval	38
Clearer expression of prescription	47
- 28) Do you think the number of injections given is a good indication of the amount of pain a patient has had?

YES	NO	DON'T KNOW
29	66	5
- 29) Do you think most patients get adequate pain relief?

YES	NO	DON'T KNOW
70	28	2
- 30) Do you find that patients requirements for analgesia differ widely following the same operation?

YES	NO	DON'T KNOW
90	0	10
- 31) Do you find that younger patients require more analgesia than older patients?

YES	NO	DON'T KNOW
61	25	14
- 32) Which analgesic do you find most effective?

Diamorphine	2%
Morphine	3
Omnopon	38
Temgesic	1
Cyclimorph	35
Pethidine	10
Epidural	2
Don't know	9

reported practice but is against providing for effective pain relief, where best control is obtained by giving the analgesic before the previous dose has completely worn off. However, 78% of the nurses did say that they offered postoperative analgesics more often than the patients requested them, which is encouraging.

Eighty-four per cent found it beneficial to give anti-emetics with intramuscular analgesics, emphasising the value of prescribing for the treatment of opiate-induced nausea. As to whether nurses found it helpful to have analgesics prescribed as a variable dose, so that they can use their discretion, the majority (84%) agreed; 79% said they would not use intramuscular analgesics for night sedation after surgery.

The value of the intramuscular approach may be questioned because 52% of respondents thought that patients preferred to suffer the pain from the operation than the pain from an injection (38% said no and 10% did not know). Perhaps as a consequence of the usually poor immediate postoperative facilities and the pressure to transfer patients from recovery areas to the ward, the question was put as to when after returning from the operating theatre, does the patient usually receive the first postoperative analgesic; 57% said within 1 hour, 14% within 2 hours, 7% within 4 hours, and 22% did not know. This could be a criticism of anaesthetic practice in not making sufficient use of intravenous administration to obtain immediate control of pain after surgery, a method shown to be effective (6-8).

The broad question was asked as to the average number of injections for pain given to a patient after an abdominal operation; 34% answered less than 4, 22% 6 injections, 11% 8 injections and only 5% above (28% did not know). Unless there is a gross difference in expectation of pain between enquiring doctors and patients in practice, this must surely represent undertreatment.

PROBLEMS OF ORGANISATION

Thirty-eight per cent said that the ward staffing situation affected the amount of analgesic given, while 59% denied this; 60% disagreed that analgesics were given at times which were convenient but 29% admitted that this was the case. The theory that a 'non-controlled' drug would be given more readily than a controlled drug, was not supported by 64% of the nurses (19% agreed and 17% did not know).

Seventy-six per cent of respondents felt that the patient should be told more about pain relief before surgery, and 50% thought that nursing staff did not have enough influence in the management of postoperative pain (38% felt they did and 12% did not know). Interestingly, 46% could imagine a time when suitably trained nurses could administer analgesics via the epidural route for patients on the ward (28% disagreed and 26% did not know).

DEFICIENCIES IN PRESCRIBING

The prescribing of analgesics was thought to be inconsistent by 62% of the nurses; 90% thought that prescribing by doctors could be improved, and possible methods included (multiple responses): a more clearly expressed prescription (47%), clearer writing (66%), shorter time intervals between doses (38%), more effective drugs (32%), more doses (13%) and larger doses (10%). The low response to the last two points is consistent with nurses' attitudes to analgesic dose (4).

Two questions regarding anaesthetists asked whether the analgesics given by the anaesthetist in theatre were adequately noted and passed on to the ward staff; 57% answered no, 33% yes and 10% did not know. Only 29% reported that anaesthetists visited their patients postoperatively, and review the analgesia (49% found they did not and 22% did not know).

ASSESSMENT OF EFFICACY

Of the opiates usually prescribed for postoperative analgesia, the volunteered replies as to which the nurse found most

effective, included papaveretum (38%), Cyclimorph (35%), pethidine (10%), morphine (3%), diamorphine (2%), buprenorphine (1%) and epidural analgesia (2%); 9% did not answer; 66% thought that the number of injections given was not a good indication of the amount of pain a patient has had. This suggests that the reviewing of prescription sheets in an attempt to assess pain in comparative analgesic trials is grossly inaccurate; 70% of nurses felt that most patients received adequate pain relief; 28% thought not and 2% were unsure.

Ninety per cent found that patients' requirements for analgesia differed widely following the same operation (10% unsure). This emphasises the need for individual review of analgesic effectiveness after surgery; 61% felt that younger patients needed more analgesia (25% thought not and 14% did not know).

Comments

Thirty-five per cent of the nurses made comments on their questionnaire and a selection is reproduced verbatim: 'It is very useful to have a choice of postoperative analgesia prescribed'. 'Analgesics should *not* be cut down straight from IM to paracetamol.' 'Patients often have to wait until I can get night sister before I can give controlled drugs, which may take a while so the patients suffers.' 'If the anaesthetist wishes analgesia to be given 4-hourly then he should state this and not leave it PRN.' 'Some doctors only prescribe one analgesic they prefer with no flexibility.' 'I can't see how a half-minute examination by a doctor can assess the severity of someone's pain.' 'I do feel strongly that anaesthetists should see their patients pre- and postoperatively and this does not always happen. The preop visit is *very* important and can allay the patients fears considerably.' 'I feel that most patients would benefit by the anaesthetist giving the first dose of analgesia just before the patient leaves the theatre.' 'A lot of patients won't admit to having pain.' 'Many patients feel they are being "soft" to ask for postop analgesics.' 'Patients are *often* in *severe* pain by the time they get back to the ward.' 'I feel that the anaesthetist who sees the patient prior to operation could at the same time also give advice on the postop analgesic he will prescribe. So many patients are unaware of the advantages—to the majority it is just a dreaded injection.' 'Anaesthetists are not available to "top-up", therefore it is essential that nurses are trained to "top-up" if more epidurals are to be used.' 'Patients receiving private medical care tend to receive more postoperative analgesia than NHS patients.'

Discussion

That patients are generally given inadequate postoperative analgesia is not in question. All surveys and reports from patients (including doctors' personal experiences) have confirmed this (2, 3, 4, 9, 10, 11, 12, 13). One survey also found that *no* patient was given all the doses of analgesic which were available by the prescription (12). In contrast, there has been much research comparing different analgesics, as more and more are added to the formulary, but little effort has been made to try and optimise the use of these drugs for the patients' benefit. Alternative sophisticated methods for pain relief are being tried, including patient self-administration, use of syringe pumps, transcutaneous nerve stimulation, epidural analgesics etc., but these are unlikely to come into widespread use, both due to cost and lack of areas for adequate patient supervision. More emphasis towards improving the simple methods, both in respect of prescribing and easier administration, ought to prove more effective in reaching the goal of better analgesia.

This survey highlights some deficiencies that are still present in today's practice. Although the knowledge of analgesics was good, the majority of nurses only administer analgesics when the patient's pain has returned, thus making effective control more difficult. Over half, according to this survey, give less than 6 doses of analgesic which should only

account for 24 hours postoperative care, and 26% remain worried about addiction.

Thirty-eight per cent of respondents thought ward staffing levels affected frequency of administration which is a significant proportion, particularly with regard to reductions in nurse staffing levels.

There remains much room for improvement in the standards of prescribing, especially regarding the clarity of the prescription and the provision for shorter time intervals. Studies into prescribing habits have shown evidence of incorrect pharmacological information about the therapeutic dose range by housestaff (4) and reports that surgeons too readily delegate the control of postoperative pain to their junior staff, who in turn rely on advice from the nursing staff (14). Anaesthetists often fail to take advantage of the intravenous route of administration, fail to inform nursing staff of analgesics already given, and fail to visit patients postoperatively. The first dose of analgesic should be monitored for its effect, ideally by the prescriber (13). One continues to wonder why the intravenous route cannot be more widely used, as the intramuscular route is so 'notoriously unreliable' (1), and according to this survey, feared by 52% of patients. Other positive ideas for improving pain control lie in better education with regard to opiates, for both nurses and doctors. The nurses felt that patients would benefit preoperatively from more information about what to expect. The value of the preoperative visit by operating room nurses has been described (15) and this is also the ideal time for the anaesthetist to fulfill his clinical role in reassuring the patient and discussing pain after surgery and its relief.

The nurses found a flexible prescription of value, and the encouragement of more initiative and involvement in pain management by nurses can only be advantageous, as it is still largely unsupervised by doctors. One recent suggestion (16) is that junior anaesthetists on-duty could supervise the effectiveness of prescribed analgesics on the surgical wards. Unless allocated specific duties, this could prove difficult in practice, as already nurses find that the anaesthetist is not always available to provide epidural analgesics when re-

quired. Also perhaps the anaesthetic departments could help by preparing a 'pain control guide' for distribution within the hospital, so that some degree of consistency occurs—one deficiency found by the nurses in this survey.

'Meanwhile the patient must perforce put up with the drugs available. The only hope of improvement is to use them better.' (13)

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