

## ACUTE POSTOPERATIVE PAIN THERAPY: CURRENT STATE – PATIENT EXPERIENCE

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**SUMMARY** – In effective control of acute postoperative pain, it is essential to respect the principles of multimodal balanced analgesia, and to apply them within organized units for the management of acute postoperative pain (acute pain service). The aim of the study was to find out patient expectations and experience in the intensity of acute postoperative pain, and the efficiency of therapy they received. Between October 11, 2002 and December 14, 2002, 103 patients having undergone elective operative procedures under general endotracheal anesthesia were surveyed at Karlovac General Hospital. All patients were asked the preoperative group of questions on the intensity of pain they expected after surgery and on the intensity of pain at which he/she wanted to be given an analgesic. The postoperative group of questions referred to the intensity of pain 24 hours after the operative procedure and to the reason for not taking an analgesic. Results showed that prior to surgery, 33.98% of patients expected mild and 37.86% moderate postoperative pain. After the surgery, most patients felt moderate pain (33.98%). The study showed the therapy for acute postoperative pain and pain control to be still inadequate. The preconditions for successful pain control are the existence of acute pain service and implementation of the multimodal balanced analgesia concept. In this context, it is important to stress the education of patients as well as of the entire team participating in the management of pain.

**Key words:** *Pain, postoperative – prevention and control; Pain, postoperative – therapy; Analgesia – trends; Patient – satisfaction; Quality of health care*

### Introduction

In effective control of acute postoperative pain (APP), it is essential to respect the principles of multimodal balanced analgesia, and to apply them within organized units for the management of acute postoperative pain (acute pain service, APS)<sup>1</sup>. Postoperative pain has unfavorable effects on the patient's recovery and, if unmanaged, it can grow into chronic pain and thus present a great social and economic problem for the community<sup>2</sup>. Growing chronic APP is generally not monitored, however, international literature data show its

prevalence to greatly vary among surgical procedures (11.5%-47% for inguinal hernia and thoracic surgery)<sup>3</sup>. In spite of the increased care being given to its control, development of standards, new pharmacotherapeutic and technical approaches, the greatest number of patients are still suffering from moderate or severe APP<sup>4,5</sup>. Little is known of expectations and experience of the patients undergoing APP therapy. The available research shows the control of APP to be inadequate due to overlooking the patient's role and the lack of a multi-modal balanced analgesia concept<sup>6,7</sup>.

The aim of the present study was to identify the expectations and experience the patients had considering the intensity of APP and efficacy of the therapy received. We also analyzed the extent to which our patients were informed on the pain intensity at which an analgesic was required and the reasons for not receiving

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*Table 1. Preoperative questions to the patient*

Question	Answer
What is the intensity of pain you are expecting to feel after the surgery?	<ul style="list-style-type: none"> <li>• No pain</li> <li>• Mild pain</li> <li>• Moderate pain</li> <li>• Severe pain</li> <li>• Unbearable pain</li> <li>• Don't know</li> </ul>
At what point do you wish to be given a pain-killer?	<ul style="list-style-type: none"> <li>• For moderate pain</li> <li>• For severe pain</li> <li>• I would wait to be offered one</li> <li>• I would rather suffer pain</li> </ul>

analgesic therapy, the share of particular analgesics and the route of administration.

### Patients and Methods

Between October 11, 2002 and December 14, 2002, 103 patients having undergone elective operative procedure under general endotracheal anesthesia were surveyed at the Karlovac General Hospital. The excluding criteria were age under 18, impossibility of communi-

*Table 2. Postoperative questions to the patient*

Question	Answer
Intensity of pain 24 hours after surgery?	<ul style="list-style-type: none"> <li>• No pain</li> <li>• Mild pain</li> <li>• Moderate pain</li> <li>• Severe pain</li> <li>• Unbearable pain</li> </ul>
The reason for not taking an analgesic	<ul style="list-style-type: none"> <li>• Patient does not want one</li> <li>• Pain not as severe as expected</li> </ul>

*Table 3. What is the extent of pain you expect to feel after surgery?*

Intensity of pain	No. of patients (N=103)	%
No pain	5	4.85
Mild pain	35	33.98
Moderate pain	39	37.86
Severe pain	6	5.83
Unbearable pain	0	0
Don't know	18	17.48
Total	103	100

*Table 4. At what point do you wish to be given an analgesic?*

Timing for analgesic	No. of patients (N=103)	%
For mild pain	20	19.42
For severe pain	65	63.11
Wait to be offered medication	4	3.88
Prefer to suffer pain	14	13.59

cating with the patient, and a procedure assigned for daily surgery. After giving their consent for surgical procedure at the anesthesiology ward, all patients were asked the preoperative group of questions on the intensity of pain the patient was expecting after surgery and on the intensity of pain at which he/she wanted to be given an analgesic (Table 1). The postoperative group of questions referred to the intensity of pain 24 hours after the operative procedure, and to the reason for not taking an analgesic (Table 2). Besides pain intensity, the analgesic given to the patient and the route of administration were recorded on postoperative rounds. Questions on pain intensity showed good correlation with the visual analogue scale (VAS).

### Results

Prior to surgery, 33.98% of patients expected mild and 37.86% moderate postoperative pain, whereas 17.8% of patients did not know what pain intensity to expect after surgery. Only few patients expected severe or no pain, and none expected unbearable postoperative pain (Table 3). When asked about the point at which they wanted to be given an analgesic medication, the majority of patients (63.11%) answered they would wait until they had severe pain before asking for an analgesic (Ta-

*Table 5. What was the intensity of pain you felt 24 hours after the surgery?*

Intensity of pain	No. of patients (N=103)	%
No pain	16	15.53
Mild pain	26	25.24
Moderate pain	35	33.98
Severe pain	25	24.27
Unbearable pain	1	0.97
Total	103	100

Table 6. The reason for not receiving an analgesic after surgery

Reason	No. of patients (N=33)	%
Does not want an analgesic	11	34.37
Pain below the expected intensity level*	21	65.63
Total	32	100

\*7=no pain; 10=mild pain; 4=moderate pain

ble 4). After the surgery, most patients felt moderate pain (33.98%), whereas the mild pain and severe pain groups were smaller (Table 5). There was a little difference between the report of pain intensity prior and after surgery in all grades of pain intensity (Fig. 1). Thirty-two (32.04%) patients stated they did not want to take an analgesic (n=11) or the intensity of pain they experienced was below the level they expected before surgery (n=21) (Table 6). The majority of patients

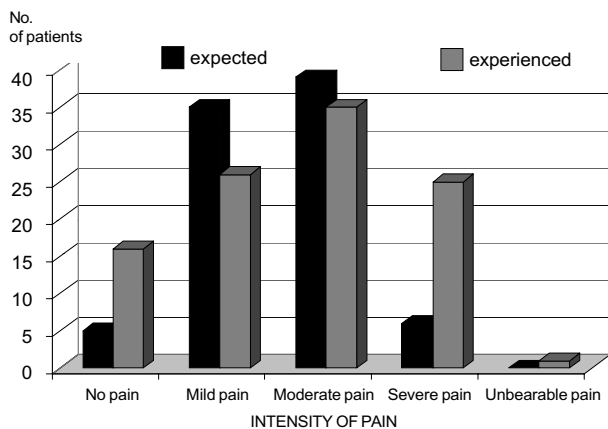


Fig. 1. Expected pain and pain experience after surgery.

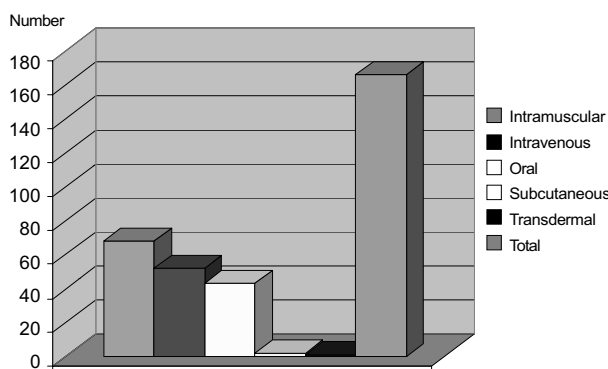


Fig. 2. Routes of analgesic administration.

Table 7. Time interval of analgesic administration

Timing	No. of patients (N=70)	%
Once	26	37.14
Two or more times at patient's request	29	41.31
Several times at regular intervals	14	20.00
Continuously intravenously	1	1.43

(78.4%) were prescribed an analgesic to be administered “on demand”, usually by the intramuscular, intravenous or oral route (Table 7, Fig. 2). A nonsteroidal anti-inflammatory drug (NSAID) was given to 58 patients, one patient received an opioid, and an NSAID with opioid was given to 11 patients.

### Discussion

Despite the increased focus on pain management over the last several years, and development of formal standards and guidelines for the management of acute pain, approximately 80% of all patients in our survey experienced acute pain after surgery<sup>5</sup>. Our study showed the control of APP to be still rather inadequate. The reasons for this lie in insufficient patient education and the lack of a multimodal balanced analgesia concept within provided at an organized APS at our hospital.

Previous studies have shown similar results<sup>4,8</sup>. The necessity of informing our patients and changing their attitudes towards pain can be justified by their expectations alone (1/3 of patients expect moderate postoperative pain). These expectations generally reflect the level of their current pain in the first 24 hours after surgery,

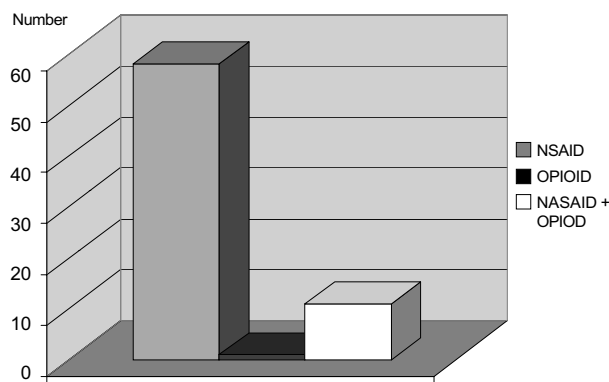


Fig. 3. Share of analgesics received.

but the share of patients suffering from severe postoperative pain is increasing as a consequence of inadequate pain control. The patients' attitude is visible from the data revealing that 63.11% of patients would opt for an analgesic only if they felt severe pain, and that 1/3 of our patients had not received an analgesic after surgery at all. It is therefore concluded that our patients find postoperative pain, which is only a marginal part of the perioperative events, something they simply have to bear.

Previous studies have shown that, apart from the level of patient education, the intensity of APP is influenced by age, sex and patient's individual response to pain<sup>9</sup>. The expected intensity of pain is considered as one of the crucial factors influencing the intensity of APP, making it clear that it is necessary to make a preoperative evaluation in this context<sup>10</sup>. In our survey, 78% of patients expected APP before the surgery. Approximately 84% of patients experienced acute pain after the surgery.

Considering the route of analgesic administration, intramuscular, intravenous and oral routes were found to predominate at our hospital. Analgesics are usually administered once or more than once at patient's request. This practice requires the nurse to interpret the patient's response to medication, also taking into account the physician's prescription. Analgesia is based on the "analgesic when necessary" principle, the medication has to be asked for by the patient, administered by the nurse and prescribed by the operator<sup>9</sup>.

Systematic analgesic application techniques such as continuous intravenous patient controlled analgesia and regional analgesic techniques have not been applied, although they are considered to be most efficient in pain control.

In 1995, the American Pain Society's Quality of Care Committee published a set of guidelines recommending quality improvement programs for acute pain: recognition and prompt treatment of pain, provision of information about analgesics to clinicians, promising patients attentive analgesic care, implementation of policies for using modern analgesic technologies, and assessment and continuous improvement of pain management<sup>5</sup>.

The basis of analgesia is provided by NSAIDs as monotherapy, rarely in combination with opioids. Efforts towards multimodal analgesia with a combination of opioid and non-opioid medications including NSAIDs, cyclooxygenase-2 inhibitor, or local anesthetics may result

in optimal pain management<sup>11</sup>. It is therefore clear that there is great discrepancy between the recommended standards and the control of APP in clinical practice, in spite of the progress in both analgesics and analgesic techniques currently available.

One of the crucial problems lies in the lack of APS, and studies performed upon the introduction of such a service have shown better control of postoperative pain<sup>12</sup>.

## Conclusion

Our study indicated that therapy and control of APP are still inadequate. A precondition for its successful control is the existence of APS and implementation of the multimodal balanced analgesia concept. In this context, it is important to stress education of patients as well as of the entire team participating in the management of pain.

APS reduces postoperative complications, recovery is quicker, patients are released from the hospital earlier, and the incidence of development of chronic pain is reduced. Accent should be put not only on the education of physicians and nurses but also of patients.

Changes in medical practice patterns, continuing research, development of new potent analgesics, and minimal adverse effects should enhance the potential to treat postoperative pain more successfully.

The low-cost model, based on the role of nurse and conducted by the anesthesiologist, comprising of multimodal and multidisciplinary approach to APP treatment, is one of the acceptable treatment models<sup>13,14</sup>.

## References

1. MAJERIĆ-KOGLER V. Liječenje poslijeoperacijske boli – suvremen pristup. *Medicus* 1999;8:61-8.
2. CARR DB, GOUDAS LC. Acute pain. *Lancet* 1999;353:2051-8.
3. PERKINS FM, KEHLET H. Chronic pain as an outcome of surgery: a review of predictive factors. *Anesthesiology* 2000;93: 1123-33.
4. APFELBAUM JL, CHEN C, MEHTA SS, GAN TJ. Postoperative pain experience: results from national survey suggest postoperative pain continues to be undermanaged. *Anesth Analg* 2003;97:534-40.
5. American Society of Anesthesiologists. Task Force on Pain Management, Acute Pain Section. Practice guidelines for acute pain management in the perioperative setting. A report by American Society of Anesthesiologists. Task Force on Pain Management, Acute Pain Section. *Anesthesiology* 1995;82: 1071-81.
6. SVENSSON I, SJOSTROM B, HALJAMAE H. Influence of

- expectations and actual pain experiences on satisfaction with postoperative pain management. *Eur J Pain* 2001;5:125-33.
7. CHUNG F, FORTE V. Canadian survey of postsurgical pain and pain medication experiences. *Can J Anaesth* 2002;49:1053-6.
  8. OWEN H, Mc MILLAN V, ROGOVSKI D. Postoperative pain therapy: a survey of patients' expectations and their experiences. *Pain* 1990;41:303-7.
  9. ZEMBA M. Osiguranje kvalitete liječenja akutne poslijeoperacijske boli. In: ZEMBA M, MAJERIĆ-KOGLER V, ŽUNIĆ J. Liječenje poslijeoperacijske boli. Zagreb: Argos, 2001:133-7.
  10. WULF H, SCHUG SA, ALLVIN R, KEHLET H. Postoperative patient management: how can we make progress? *Acute Pain* 1998;1:32-44.
  11. JIN J, CHUNG F. Multimodal analgesia for postoperative pain control. *J Clin Anesth* 2001;13:524-39.
  12. WHEATLEY RG, MADEJ TH, JACKSON IJB, HUNTER D. The first years of experience of an acute pain service. *Br J Anaesth* 1991;67:353-9.
  13. LOESER JD, MELZACK R. Pain: an overview. *Lancet* 1999;353:1607-9.
  14. RAWAL N, BERGGREN L. Organization of acute pain services: a low cost model. *Pain* 1994;57:117-23.

### Sažetak

#### LIJEČENJE AKUTNE POSLIJEOPERACIJSKE BOLI: DANAŠNJE STANJE – ISKUSTVA BOLESNIKA

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Za učinkovitu kontrolu akutne poslijeoperacijske boli neophodno je poštivati načela multimodalne balansirane analgezije, te ista provoditi unutar organiziranih jedinica za liječenje akutne perioperacijske boli. Cilj ovoga ispitivanja bio je ispitati očekivanja i iskustva bolesnika o jačini akutne poslijeoperacijske boli te učinkovitost primijenjene terapije. U razdoblju od 11. listopada 2002. do 14. prosinca 2002. godine u Općoj bolnici Karlovac anketirano je 103 bolesnika koji su bili podvrgnuti elektivnom operacijskom zahvatu u općoj endotrahealnoj anesteziji. Svim bolesnicima je nakon pristanka za operacijski zahvat u anesteziološkoj ambulanti postavljena prijeoperacijska skupina pitanja o jačini boli koju bolesnik očekuje poslije operacije te jačini boli kod koje želi dobiti analgetik. Poslijeoperacijska skupina pitanja odnosila se je na jačinu boli 24 sata nakon operacijskog zahvata te razlog neprimanja analgetika. Rezultati su pokazali da je prije operacijskog zahvata 33,98% bolesnika očekivalo blagu, a 37,86% bolesnika srednje jaku poslijeoperacijsku bol. Nakon operacijskog zahvata najveći broj bolesnika imao je srednje jaku poslijeoperacijsku bol (33,98%). Ovo je ispitivanje pokazalo kako je terapija akutne poslijeoperacijske boli, kao i njena kontrola još uvijek nedostatna. Preduvjet za njezinu uspješnu kontrolu je postojanje jedinice za liječenje akutne perioperacijske boli te provođenje koncepta multimodalne balansirane analgezije. U okviru njega važno je staviti naglasak na izobrazbu bolesnika, ali i cjelokupnog tima koji sudjeluje u liječenju boli.

*Ključne riječi: Bol, poslijeoperacijska – prevencija i kontrola; Bol, poslijeoperacijska – liječenje; Analgezija – trendovi; Bolesnici – zadovoljstvo; Kvaliteta zdravstvene skrbi*