Ann Agric Environ Med. 2013; Special Issue 1: 48–51
www.aaem.pl

ORIGINAL ARTICLE

Postoperative pain combating and evaluation of patient's satisfaction from analgesic treatment

Anna Lewandowska[1], Rafał Filip[2], Małgorzata Mucha[1]

[1] *Institute of Healthcare, The Bronisław Markiewicz State School of Technology and Economics, Jarosław, Poland*
[2] *Department of Clinical Endoscopy, Institute of Rural Health, Lublin, Poland*

Lewandowska A, Filip R, Mucha M. Postoperative pain combating and evaluation of patient's satisfaction from analgesic treatment. Ann Agric Environ Med. 2013; Special Issue 1: 48–51.

Abstract

Pain is an inherent element of human life and one of the most unpleasant and unwanted experiences, causing fear, anxiety, or even anger. Pain is one of the strongest and most annoying experiences with a clear subjective character indicating risk to an organism or personality, or expressing its damage. Despite the intense development of medicine and modern surgical methods, surgery is still dealing with the huge problem of pain and its proper control. Effective combating of postoperative pain is currently a priority of modern surgical treatment, since it not only minimizes the patient's suffering, but also improves the quality of his/her life, decreases the number of complications, shortens the hospital stay, and at the same time decreases the costs of treatment.

Objective. The purpose of the presented study is analysis of the frequency of occurrence, intensity of postoperative pain and evaluation of patients' satisfaction with analgesic treatment.

Material and methods. The research included 100 patients from the Department of Trauma and Orthopaedic Surgery, 54% of women and 46% of men, 38% of whom were urban inhabitants and 62% rural inhabitants of the Podkarpackie voivodeship in south-east Poland. The research method used in was a diagnostic survey, analysis of documentation and pain measurement with numerical and visual analogue scales.

Results. Pain occurred from 12 – 24 hours before the procedure in the case of 20% of the patients, whereas 48% of the respondents complained about pain more than 1 day before the procedure. Pain before the procedure was a partial difficulty in self-care and physical activity for 26% of the subjects. The biggest amount of patients (30%) were afraid of postoperative complications. In the first day after the procedure, as much as 84% of the respondents complained about pain, on the second day the pain was felt by 74% of the patients, and on the third day by 57% of the respondents. Pain intensity, which was moderate in accordance with the VAS scale, was signalized by 35% of patients, strong pain was reported by 60% of the patients, and 5% of men evaluated the pain as very strong.

Conclusions. Postoperative pain was only a partial difficulty for the majority of patients, administration of a painkiller brought relief to the majority of patients, who had been afraid of the surgical procedure because of postoperative complications, not postoperative pain.

Key words

pain, pain treatment, patient's satisfaction

INTRODUCTION

Pain is an inherent element of human life and one of the most unpleasant and unwanted experiences, causing fear, anxiety, or even anger. Pain is one of the strongest and most annoying experiences, with a clear subjective character indicating risk for the organism or personality, or expressing its damage [1, 2, 3]. The most often quoted definition of pain is an elaboration of the International Association for the Study of Pain (JASP) of 1979, according to which 'pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.' The definition is very broad and general since pain is a heterogenic phenomenon. Pain is always unpleasant; one cannot get used to pain, it always has a somatic and psychical character [4, 5, 6, 7, 8]. It is a complex phenomenon which includes sensual-discriminative, emotional, cognitive and behavioural components, according to which it is classified. Pain is an individual experience of each person, it is very individually diversified. Pain is a phenomenon known to everyone, but despite that, it is an individual and incomparable feeling.

In 1995, the American Pain Society considered pain to be the fifth vital sign [6], which is concurred with the American Medical Association, and should measured in the same way as other vital signs, and recording the value of such measurements makes pain 'visible' for the medical doctor and nurse [9]. Sensitivity to pain is an individual factor. It is influenced by age, gender, race, pain threshold, external factors and psych, all of which play an important role in the qualitative and quantitative evaluation of pain. Feeling and defining pain is connected with personality differences and it may be modified by psychical factors. Pain experiences and their intensity are not always proportional to the causes and strength with which the pain impulse influences the organism. Pain may be considered both as positive and negative reactions of an organism. The positive reaction occurs when pain protects us from body damage and informs about the existing disease process. Negative reaction brings unnecessary suffering to the patient, especially in the case of chronic disease ravaging the organism and psyche [10, 11].

Address for correspondence: Anna Lewandowska, Czarnieckiego 16, 37-500 Jarosław, Poland
e-mail: am.lewandowska@poczta.fm

Received: 19 November 2013; accepted: 29 December 2013

Postoperative pain is an unpleasant sensory and emotional experience caused by intraoperative damage to tissues and organs, together with accompanying autonomic, emotional and behavioural reaction to the injury. The intensity of the experienced pain and area of its feeling are usually directly proportional to the extent of the operation. Reaction to the experienced pain depends also on previous pain experiences, general health condition and personality, and environmental conditions. Postoperative pain concerns both the surface tissues cut as a result of surgical incision of deep tissues, often well innervated, depending on the field of surgery performed. Postoperative pain is a self-limiting phenomenon with the highest intensity during the first and second day after surgery, and much lower intensity in the third and fourth postoperative day. Thoracotomies, surgeries on the upper abdomen and perineal area, are the most painful; the postoperative pain is the strongest and long-lasting [12].

Despite the intense development of medicine and modern surgical methods, surgery is still dealing with the huge problem of pain and its proper control. Effective combating of postoperative pain is currently a priority of modern surgical treatment, since it not only minimizes the patient's suffering, but also improves the quality of his/her life, decreases the number of complications, shortens the hospital stay, and at the same time decreases the costs of treatment.

Proper postoperative pain treatment depends on many factors, especially on the organisation of therapeutic teams, patients' education, regular training of medical personnel, systematic measurement of pain intensity at regular time intervals, and monitoring pain in properly prepared documentation [8].

Objective. The purpose of the presented study is analysis of the frequency of occurrence, intensity of postoperative pain, and evaluation of patients' satisfaction with analgesic treatment.

MATERIALS AND METHOD

The research group consisted of 100 patients from the Department of Trauma and Orthopaedic Surgery, 54% women and 46% men, 38% of whom were urban inhabitants and 62% were rural inhabitants of the Podkarpackie voivodeship in south-eastern Poland. 10% of the women and 10% of the men had basic education, 12% of the men and 14% of the women had vocational education, 22% of men and 22% of women had secondary education, whereas 8% of women and 2% of men had higher education. In the entire research group, the biggest population constituted persons aged between 51–65 years (36% – 16% men, 20% women); subjects aged between 18–35 years constituted 26% (20% men, 6% women); those aged 36–50 constituted 22% (4% men, 18% women), and persons aged 66 and over constituted 16% of the subjects (6% men, 10% women).

The research was conducted from October 2010 – June 2011. Participation in the study were voluntary and the respondents selected randomly from among patients who were in the third day after surgery. This gave the opportunity to assess each patient's pain intensity and the satisfaction of the treatment during the most intense pain.

The research methods used were a diagnostic survey, analysis of documentation, and pain measurement with numerical and visual analogue scales. The visual analogue scale (VAS) is a graphic scale: the patient is asked to mark the level of pain intensity on a section with length of 10 cm, where 0 indicates lack of pain, and 10 the biggest imaginable pain. Numerical scale (NRS) with 11 grades, similar to the VAS scale, is often used during pain intensity determination. The patient's tasks is to mark, in accordance with his/her feeling, a digit corresponding to the current pain intensity. The scale has values from 0 – 'I do not feel pain at all'– to 10 – 'the worst pain I can imagine' [13, 14].

RESULTS

From among the subjects, an active lifestyle was performed by 54%, including 24% of men and 30% of women; a moderate lifestyle was performed by 44% (20% men, 24% women), whereas an inactive lifestyle was declared by only by 2% of men. Almost a half of the respondents wee professionally active (48% – 20% men, 28% women); 14% of the subjects were not currently employed (10% men, 4% women), and 38% of the respondents had already retired (16% men, 22% women). For 24% of the subjects, it was the first hospital stay (12% men, 12% women), while for 76% of the respondents it was not the first hospital stay (34% men, 42% women). As much as 60% of the patients had been previously operated on (26% men, 34% women), and it was the first surgical procedure for 40% of the patients (20% men, 20% women). 32% of the research group has undergone a surgical procedure up to 12 hours after injury (16% men, 16% women). Pain occurred from 12 – 24 hours before the procedure in the case of 20% of patients (12% men, 8% women), and 48% of the respondents complained about pain more than 1 day before the procedure (18% men, 30% women). Pain before the procedure was a partial difficulty in self-care and physical activity for 26% of the subjects (14% men, 12% women), it was a considerable difficulty for 66% of the respondents (28% men, 38% women), and for 8% of the patients it was not a difficulty (4% men, 4% women). The biggest amount of patients (30%) were afraid of postoperative complications (14% men, 16% women). Pain was a cause of fear in the case of 12% of the patients, 12% of the respondents were afraid of loss of physical and professional activity.

As much as 96% of the patients were informed before the surgical procedure about the methods of analgesic treatment (44% men, 52% women) and 4% of the respondents did not receive any such information (2% men, 2% women). 90% of the respondents were informed about the methods of pain measurement and acquainted with the tools with which the pain is measured (42% men, 48% women), while 10% of the respondents did not receive any such information (4% men, 6% women).

The group of subjects with minor tissue damage consisted of 28% of all respondents (18% men, 10% women), 56% had average tissue damage (18% men, 36% women) and 16% had considerable tissue damage (10% men, 6% women). During the procedure, general anaesthesia was applied to 26% of respondents (10% men, 16% women), 42% received lumbar anaesthesia (20% men, 22% women), 12% regional anaesthesia (4% men, 8% women), and 20% local anaesthesia (10% men, 10 % women).

On the first day after the procedure, as much as 84% of the respondents complained about pain (36% men, 48% women);

on the second day, pain was felt by 74% of the patients, and on the third day by 57%. Moderate pain intensity in accordance with the VAS scale was signified by 35% of patients (15% women, 20% men), strong pain was reported by 60% of the patients (18% women, 42% men), and 5% of men evaluated the pain as very strong. Painkillers were administered to all patients after the procedure. Administration of a painkilling agent brought relief for 98% of the respondents (44% men, 54% women). In the case of 40% of the patients, the pain regressed after 5–10 minutes (24% men, 16% women), after 15–20 minutes, relief was felt by 52% of the respondents (18% men, 34% women), and 8% felt relief after 20–30 minutes (4% men, 4% women). Painkillers were administered four times a day to 56% of the subjects (28% men, 28% women), 3 times a day to 36% of the respondents (14% men, 22% women), twice a day to 22% (14% men, 8% women), and 14% were administered medicines on demand (4% men, 10% women). A considerable majority of the respondents (88%) received medicines after 5 minutes (44% men, 44% women), and 15 minutes after painkillers were administered to 12% of the respondents (2% men, 10% women). The medicines were most often administered to the patients intravenously (70% – 32% men, 38% women). None of the respondents experienced side-effects after the administration of painkillers.

In the case of 82% of the respondents, pain return after 2–4 hours (38% men, 44% women). The highest pain intensity was experienced by patients during the first hours after procedure (54% – 22% men, 32% women), 44% of the respondents experienced the strongest pain at night after the surgical procedure (22% men, 22% women).

In the case of 16% of the respondents, postoperative pain disturbed their rest (6% men, 10% women), and disabled sleep in the case of 18% (10% men, 8% women). 66% of the respondents had known and applied non-pharmacological treatment (24% men, 42% women). According to 92% of the respondents, a nurse played the leading role in monitoring pain after postoperative procedure (42% men, 50% women); for 6%, such role was played by the medical doctor (2% men, 4% women). Information about the method of dealing with pain after surgery was most often provided by a nurse (90%), and more rarely by a medical doctor (10%). As much as 89% of the respondents evaluated the analgesic treatment after procedure as very good (40% men, 42% women).

DISCUSSION

One of many problems modern medicine has to deal with is postoperative pain. It is experienced by almost every patient after procedure, and is considered to be acute pain which constitutes a reaction to intraoperative tissue and organs damage, and it is felt after intraoperative analgesia remits [11]. Its intensity is different for every patient, depending on the type and extensiveness of the procedure, on the applied anaesthesia during surgery, or personal sensitivity of the patient. Postoperative pain may be influenced by genetic features of the patient, his/her age and gender and cultural conditions. A patient's experiences with pain in the past are also important. The most often occurring postoperative pain is the nociceptive pain, more rarely neuropathic pain, with the highest intensity in the first days after procedure [12]. A patient's pain evaluation can be included in the scope of the most important skills of a therapeutic team. It requires an ordered knowledge, attentive and careful listening to and observation of the patient. Experience is also helpful for proper evaluation. It cannot be a one-time event, it requires constant repetition of attempts and verification of information on pain [13]. All activities should be subject to cooperation between the surgeon, anaesthesiologist and nurse. Each patient subject to planned surgery should be informed about the methods of combating that type of pain, as one of the methods for combating postoperative pain is the patient's education and his/her awareness of surgical experiences [14, 15, 16]. The image of reaction to pain is an individual feature of each person and an acquired model of reacting. Pain may be verbalised by the patient, although some patients have problems with naming it. A nurse taking care of a patient exposed to pain after surgery, should recognize the non-verbal symptoms of pain (accelerated and shallow breathing, accelerated pulse, excessive sweating, minor increase of arterial pressure, face grimace, crying, lamenting, moaning, sighing, sometimes swearing) which may be demonstrated by the patient, and quickly react to the signalized symptoms in order to prevent further unfavourable results of pain. The tasks of the nurse include regular control of the intensity of pain and recording them on special observation charts [16, 17, 18, 19, 20]. As proved by own research, according to patients, the nurse plays the leading role in monitoring the postoperative pain, and a considerable majority of patients consider their pain treatment as satisfactory (89%).

An important element of provision of proper postoperative care is the patient's perception of the occurrence of possible postoperative complications, or complications connected with the administration of analgesics; therefore, next to the level of pain intensity, the observation of haemodynamics, ventilation and intestinal peristalsis also have to be conducted [19, 20, 21, 22]. Own research proves that despite previously experienced pain, as much as 30% of the patients were afraid of postoperative complications, not of pain (12%).

The most important purpose of pain treatment, despite of limitation of risk of occurrence of postoperative complications, is providing the patient with subjective comfort and acceleration of his/her recovery. Research conducted by Jaracz etal., proved that the strongest ailments occur in the zero and first day after the procedure, during which patients defined their pain as average or strong [16, 23, 24, 25, 26]. Own research also proved the dependency of pain on the postoperative day. Experiencing pain by the patients was definitely bigger on the first day after the procedure than on the third day.

The activities undertaken by the therapeutic team aimed at relieving pain bring rational results, thanks to their multidirectional activity. On the one hand, this is pain evaluation with available scales which are understandable and unambiguous for the patient, on the other, quick reaction of the team in the administration of painkillers, which together bring success in the form of the patient's satisfaction [27, 28, 29, 30].

CONCLUSIONS

1. Postoperative pain was only a partial difficulty for the majority of patients, a bigger difficulty was the dysfunction of the operated motor organ.
2. Pain only partially disabled the rest of the majority of persons.

3. Administration of a painkiller brought relief to the majority of patients.
4. Pain partially limited physical activity and self-care and partially disabled sleeping and rest, and despite that, the majority of patient evaluated their analgesic treatment after procedure as very good.
5. The majority of patients were afraid of the surgical procedure because of postoperative complications, not postoperative pain.

REFERENCES

1. Brill S, Gurmann GM, Fisher A. A history of neuraxial administration of local analgesis and opioids. Eur J Anaesthesial. 2003; 20: 682–689.
2. Bogusz J. Encyclopaedia for nurses. PZWL, Warszawa 1991.
3. Kocur J. Art of treatment. 2003; 9(3–4): 59.
4. Zając P, Szpakowski R. Nurse's role in combating postoperative pain. Biuletyn Informacyjny- Podkarpacka Okręgowa Izba Pielęgniarek i Położnych z/s w Przeworsku 2010; (7–8): 15.
5. Czaplińska M. Pain – a disease itself. Magazyn Pielęgniarki i Położnej 2010; (1–2): 33.
6. Koszewski W. Pain treatment in various diseases. Termedia Wydawnictwa Medyczne, Poznań 2009.p. 5.
7. Formański J. Psychology. Wydawnictwo Lekarskie PZWL, Warszawa 2003.p.198.
8. Koszewski W. Pain treatment in various diseases. Termedia Wydawnictwa Medyczne, Poznań 2009.p.5.
9. Wordliczek J, Dobrogowski J. Postoperative pain treatment. Training set for nurses.p.3.
10. Gaszyński W, Żaryski W, Gaszyński T. Current methods of pharmacological treatment of postoperative pain. Ordynator Leków 2005; (11–12): 49–50.
11. Przewoźnik E, Kapała W. Pain dictionary, meaning the most often used pain definitions after various surgical procedures. Pielęg. Pol 2007; 1(23): 20–24.
12. Watson MS, Lukas CF, Hoy AM, Back JN. Palliative care. Urban & Partner, Wrocław 2005.p.177–179.
13. Dobrogowski J, Mayzner-Zawadzka E, Drobnik L et al. Postoperative pain relieving – recommendations 2008. Ból 2008; 9.
14. Wołowicka L. Anaesthesiology and intense care – Clinic and nursing. Warszawa 2007.p. 289–296.
15. Dobrogowski J, Wordliczek J, Przeklasa-Muszyńska A. Pharmacotherapy of postoperative pain. Przegl Lek. 2000; 57: 215–220.
16. Kapała W. Nursing in surgery. Czelej, Lublin 2006.p.41.
17. De Loach JE. Nursing in general surgery. PZWL, Warszawa 1984.
18. Bowden J. Postoperative pain relief. Pain relief in Current Obstetrics and Gynecology 1996; 6: 74- 79.
19. Idvall E. Nursing documentation of postoperative pain management. J Clin Nurs. 2002; 1: 734–742.
20. Zadroga M, Dyk D. Postoperative pain as current problem in patient's nursing. IV Zjazd Pielęgniarstwo w anestezjologii i intensywnej opiece – wymogi i oczekiwania a realia. Poznań 2005.
21. Kołodziej W, Karpel E. Postoperative pain on surgical department according to the survey research with use of McGill-Melzack questionnaire – initial report. Probl Pielęg. 2008; 16(3): 232, 235.
22. Misiołek H, Budziński D. Postoperative pain – pathophysiology and methods of treatment with consideration of urological procedures. Przegląd Urologiczny 2002; 3: 48–52.
23. Rawe IM, Lowenstein A, Barcelo CR, Genecov DG. Control of Postoperative Pain with a Wearable Continuously Operating Pulsed Radiofrequency Energy Device: A Preliminary Study. Aesthetic Plastic Surgery 2011.
24. Buvanendran A, Kroin JS, Della Valle CJ, Kari M, Moric M, Tuman KJ. Perioperative oral pregabalin reduces chronic pain after total knee arthroplasty: a prospective, randomized, controlled trial. Anesth Analg. 2010; 110: 199–207.
25. Andersen KG, Kehlet H. Persistent pain after breast cancer treatment: a critical review of risk factors and strategies for prevention. J Pain. 2011; 12: 725–74.
26. Frykberg R, Martin E, Tallis A, Tierney E. A case history of multimodal therapy in healing a complicated diabetic foot wound: negative pressure, dermal replacement, and pulsed radiofrequency energy therapies. Int Wound J. 2011; 8: 132–139.
27. Frykberg RG, Driver VR, Lavery LA, Armstrong DG, Isenberg RA. The use of pulsed radiofrequency energy therapy in treating lower extremity wounds: results of a retrospective study of a wound registry. Ostomy Wound Manage 2011; 57: 22–29.
28. Rohde C, Chiang A, Adipoju O, Casper D, Pilla AA. Effects of pulsed electromagnetic fields on IL-1 beta and post-operative pain: a double-blind, placebo-controlled pilot study in breast reduction patients. Plast Reconstr Surg. 2010;125: 1620–1629.
29. Li Q, Kao H, Matros E, Peng C, Murphy GF, Guo L. Pulsed radiofrequency energy (PRFE) accelerates wound healing in diabetic mice. Plast Reconstr Surg. 2011; 127: 2255–2262.
30. Moffett J, Griffin N, Ritz M, George F. Pulsed radiofre-quency energy field treatment of cells in culture results in increased expression of genes involved in the inflammation phase of lower extremity diabetic wound healing. J Diabet Foot Com-plicat. 2010; 2: 57–64.