ORIGINAL ARTICLE

Presentation and manual on pain management have changed analgesics prescription in the postoperative period of general surgeries*

Palestra e manual sobre tratamento da dor alteraram a prescrição de analgésicos no pós-operatório de cirurgia geral

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ABSTRACT

BACKGROUND AND OBJECTIVES: Analgesic planning to manage acute postoperative pain is critical for its effective control, because if untreated it brings noxious changes to the body. This study aimed at analyzing the change in analgesics prescription in the postoperative period of general surgeries before and after the presentation of a symposium and the distribution of a pain management manual.

METHOD: This was a prospective study with 45 patients aged between 18 and 70 years, submitted to general surgeries, to evaluate the effectiveness of postoperative analgesia via the pain numerical scale, and to analyze analgesics prescription before and after a presentation and the distribution of a postoperative pain management manual for assistant, resident and internship physicians of the Surgical Clinic of a medium-sized teaching hospital.

RESULTS: Pain intensity in the control group was 3.64 ± 3.2 in the 1st hour, 4.24 ± 2.9 within 12 hours, 4.84 ± 2.2 within 24 hours and 4.08 ± 2.3 within 48 hours. Pain intensity in the post-study group was 2.85 ± 2.8 in 1 hour, 2.90 ± 2.7 within 12 hours, 2.25 ± 2.6 within 24 hours and 1.95 ± 2.4 within 48 hours. There has been no statistically significant difference among different hours for the same group, however there has been a difference between the 24th hour of the control group as compared to the study group ($p < 0.001$) and between the 48th hour of the control group as compared to the study group ($p < 0.005$).

CONCLUSION: The proposed intervention has generated mild changes in postoperative analgesics prescription, however enough to provide pain intensity decrease in some studied moments.

Keywords: Analgesia, Pain evaluation, Surgery.

RESUMO

JUSTIFICATIVA E OBJETIVOS: O planejamento da analgesia no tratamento da dor aguda pós-operatória é fundamental para o seu controle efetivo, pois quando não tratada acarreta alterações nocivas ao organismo. Este estudo teve como objetivo analisar a mudança na prescrição de analgésicos no período pós-operatório de cirurgias gerais antes e após a apresentação de simpósio e o fornecimento de manual sobre tratamento da dor.

MÉTODO: Estudo prospectivo com 45 pacientes, com idade entre 18 e 70 anos, submetidos a cirurgias gerais, avaliando a efetividade da analgesia pós-operatória pela aplicação da escala numérica da dor e análise da prescrição dos analgésicos, antes e após a apresentação de palestra e o fornecimento de manual sobre tratamento da dor pós-operatória, para os médicos assistentes, residentes e internos da Clinica Cirúrgica de um hospital escola de médio porte.

RESULTADOS: No grupo controle, a intensidade da dor foi 3,64 ± 3,2 na 1ª hora, 4,24 ± 2,9 em 12 horas, 4,84 ± 2,2 em 24 horas e 4,08 ± 2,3 em 48 horas. No grupo pós-estudo, a intensidade da dor foi 2,85 ± 2,8 em 1 hora, 2,90 ± 2,7 em 12 horas 2,25 ± 2,6 em 24 horas e 1,95 ± 2,4 em 48 horas. Não houve diferença estatística significativa entre as diferentes horas do mesmo grupo, mas existiu uma diferença entre a 24ª hora do grupo controle em relação ao grupo estudo ($p < 0,001$), e entre a 48ª hora de grupo controle em relação ao grupo estudo ($p < 0,005$).

CONCLUSÃO: A intervenção proposta gerou mudanças discretas nas prescrições analgésicas pós-operatórias, porém suficientes para proporcionar diminuição na intensidade da dor em alguns momentos do estudo.

Descritores: Analgesia, Avaliação da dor, Cirurgia.

INTRODUCTION

Acute postoperative pain control starts with analgesic planning and helps patients' return to their normal activities in the postoperative period with less hospital stay e decreased costs. For such, it is necessary a rapport among the services of Anesthesiology, Surgery and Nursing, availability for periodic visits, adequate training of involved professionals and adherence to a well designed protocol[1]. To better control surgical trauma pain, multimodal analgesia should always be used with non-steroid anti-inflammatory drugs (NSAIDs), cyclo-oxygenase-2 inhibitors (COX-2), opioids, local

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anesthetics, adrenergic α_2 agonists and NMDA receptor blockers in a preemptive and/or preventive way[2].

Systemic analgesia should always be used for early postoperative pain management, with drug schedule, being recommended the venous route. NSAIDs, COX-2 inhibitors, opioids and dipirone are indicated for this route.

Rescue analgesia should also be used when the original analgesic plan is not enough.

With regard to abdominal surgeries, postoperative analgesia has similar characteristics; however pain is different whether surgery is performed in upper or lower abdomen. When managing postoperative pain induced by such interventions, one should take into consideration the difficulty for adequate movement due to drains and tubes, as well as diaphragm movement limitation observed in upper abdomen surgeries, in surgeries needing thoraco-abdominal access or when median supraumbilical, subcostal or transverse incision is used[2-4].

Surgical pain has been widely studied in Brazil, however it is necessary to analyze whether the analgesic therapy applied by anesthesiologists and surgeons to their patients has been adequate, since studies on this subject are relatively scarce.

This study aimed at researching the effectiveness and the type of analgesia induced in the postoperative period of general surgeries in the Teaching Hospital of Taubaté (HUT) before and after a presentation and the distribution of a manual on postoperative pain to physicians, residents and internship physicians.

METHOD

This was a prospective, controlled, randomized study with 45 patients aged between 18 and 70 years, submitted to general surgeries in the HUT Operating Center, who were divided in two groups: Control Group (CG) with 25 patients and Study Group (SG) with 20 patients.

Pain intensity was evaluated by the pain numerical scale (PNS), which is a simple, non-invasive and accessible tool which quantifies pain in a subjective way, where zero is no pain and 10 the worst pain ever experienced by the patient.

CG – pain intensity was evaluated in the 1st, 12th, 24th and 48th hour after surgery completion and analgesic prescription was analyzed in the same moments.

SG – there has been a presentation on postoperative pain pathophysiology and management, together with the distribution of a pocket manual on postoperative pain pathophysiology and treatment to physicians, residents and internship physicians. Pain intensity evaluation and prescription analysis were performed in the following weeks, in the same moments evaluated for CG.

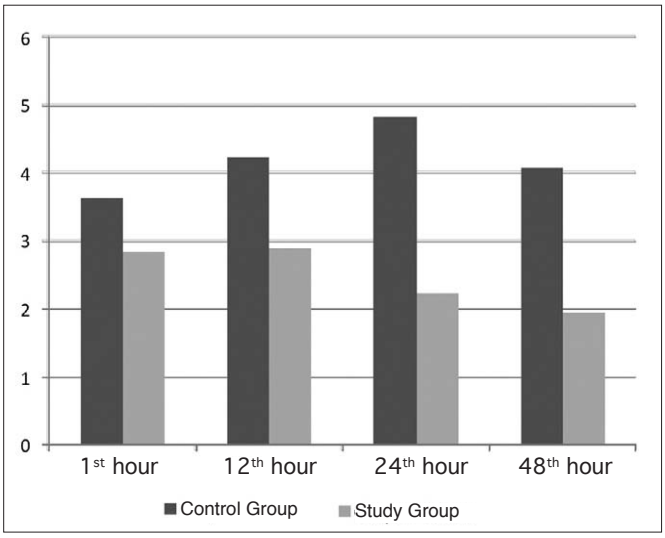
SAS (Statistical Analysis System) Institute's JMP® software was used for statistical analysis of results after guidance and Student's t test was applied with significance level of less than 5% ($p < 0.05$).

This study was approved by the Research Ethics Committee, University of Taubaté (Protocol CEP/UNITAU 077-2011).

RESULTS

CG patients have undergone the following surgeries: 7 laparotomies, 4 open cholecystectomies, 4 inguinal hernia repairs, 2 videolaparoscopic cholecystectomies, 1 thoracotomy, 1 appendectomy, 1 gastroduodenopancreatectomy, 1 thyroidectomy, 1 gastrectomy and 1 rectal adbdominoperitoneal amputation. SG patients underwent 5 cholecystectomies, 5 open cholecystectomies, 3 laparotomies, 3 inguinal hernia repairs, 2 videolaparoscopic cholecystectomies and 2 appendectomies.

Pain intensity by PNS in CG was 3.64 ± 3.2 in the 1sth, 4.24 ± 2.9 in the 12thh, 4.84 ± 2.2 in the 24thh and 4.08 ± 2.3 in the 48thh. For SG, pain intensity was 2.85 ± 2.8 in the 1sth, 2.90 ± 2.7 in the 12thh, 2.25 ± 2.6 in the 24thh and 1.95 ± 2.4 in the 48thh (Graph 1).



Graph 1 – Pain intensity means by the pain numerical scale in the 1st, 12th, 24th and 48th hour.

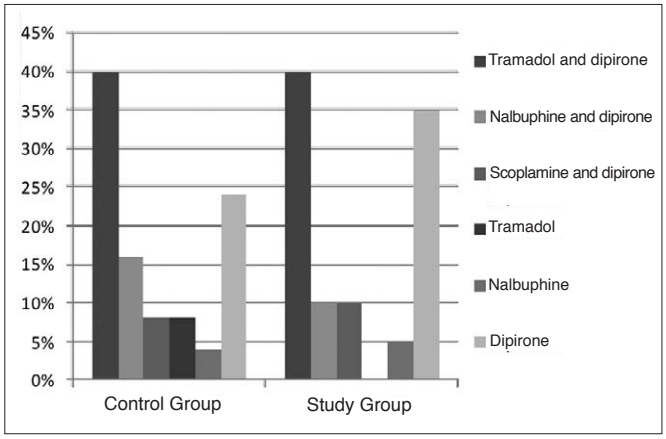
When pain intensity was compared within groups, no statistically significant difference was detected in the four evaluated moments. However, there has been statistically significant difference between CG and SG in the 24th h ($p < 0.001$) and in the 48th h ($p < 0.005$).

In terms of analgesics, major differences found were that CG was prescribed paracetamol, which was not prescribed for SG, and scopolamine for CG was found in the four evaluation hours, while for SG scopolamine was prescribed only in the first day, being identified in the 1st and 12th h. The use of dipirone alone was increased, especially in the 24th and 48th h (Graphs 2 to 4).

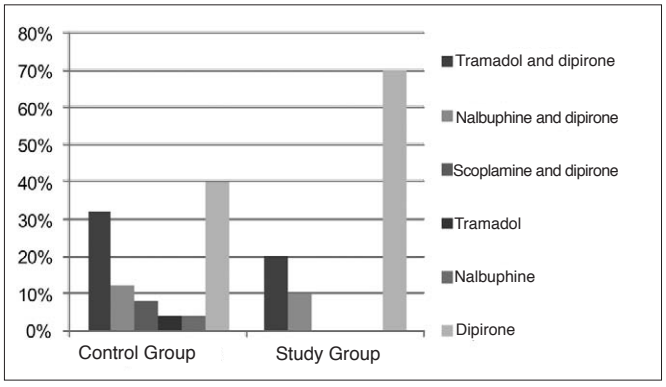
Most important change was seen in analgesic doses. CG received under-doses of tramadol and nalbuphine, with very long intervals between doses, which was partially corrected in SG (Graphs 2 to 4).

As sees in graphs 2, 3 and 4, there has been predominance of tramadol and dipirone (40%) in CG in the 1st and 12th h, predominantly maintaining analgesia with dipirone alone in the 24th and 48th h (40% and 52%, respectively). In SG there has also been predominance of tramadol and dipirone in the 24th and 48th h (70%).

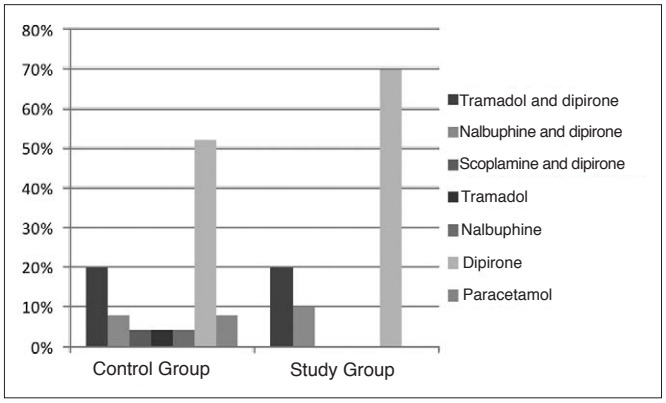
It was then observed that prescriptions were predominantly of tramadol and dipirone.



Graph 2 – Analgesics used in the 1st and 12th hour for both groups.



Graph 3 – Analgesics used in the 24th hour for both groups.



Graph 4 – Analgesics used in the 48th hour for both groups.

DISCUSSION

For its importance, the prevalence of postoperative pain has been object of several studies[5-7]. Modern postoperative pain control should be achieved with the association of analgesics with different action mechanisms systemically or regionally administered, which is the so-called multimodal or balanced analgesia[2,8,9].

Both groups have received the association of dipirone and tramadol or nalbuphine, however in several patients these drugs were used alone, without association with any other drug. Our study has also not identified the use of regional anesthesia alone or associated with other drugs, even in patients submitted to surgeries which induce more severe pain.

Another aspect highly stressed by studies on postoperative pain control is the use of adequate doses at regular intervals according to the pharmacokinetics of each drug[2,8,9]; however, our study has shown that most patients have received under-doses and inadequate intervals between doses, especially in the CG.

However, when prescriptions of SG were compared to those of CG, it was observed that there has been increase in drug doses and decrease in intervals between doses, showing that the presentation about postoperative pain pathophysiology andmanagement and the distribution of a pocket manual about postoperative pain pathophysiology and management to physicians, residents and internship physicians of the surgical clinic of the studied hospital has improved prescriptions, however was unable to adjust the prescription to pharmacokinetics and pharmacodynamics of prescribed drugs, and was also unable to have them applying the right multimodal analgesia concept.

However, dose adjustment after intervention, although mild, has provided improved analgesia for the study group as shown in graph 1.

A point to be stressed is that in spite of the use of just weak opioids such as tramadol and nalbuphine, very often in under-doses and with inadequate intervals between doses, pain intensity in both groups was not high, which may be explained by the type of surgeries to which patients were submitted, which were surgeries not inducing severe pain.

Our study has shown that minor interventions, such as the lesson to physicians and residents, together with the pocket manual, were enough to decrease postoperative pain intensity in this service; however a different study with similar methodology, carried out in the same hospital with physicians, residents and internship physicians of the Gynecology clinic was unable to change team approaches to manage acute postoperative pain[10].

Although knowing that major surgeries are still associated to unwanted sequelae, such as pain, cardiopulmonary, infectious and thromboembolic complications, brain dysfunction, nausea and gastrointestinal paralysis, fatigue and prolonged recovery, and that no analgesic technique or regimen has been able to eliminate postoperative morbidity and mortality, multimodal interventions may lead to major decrease in unwanted sequelae with recovery improvement and decreased postoperative morbidity and total costs[10]. But since there are still major difficulties to change medical approaches, it is necessary an ongoing and persistent teaching and training work, and work with a team specialized in managing pain, to improve acute postoperative pain management[11].

In spite of implementation difficulties, a postoperative pain management protocol may be adopted with an evaluation routine requiring simple, fast and inexpensive data collection, and which would significantly impact postoperative quality of patients admitted to the service which, for being an academic environment, may promote encouragement for actions like this to be taken, to

make medical and nursing teams aware of the importance of controlling postoperative pain, and how to adequately manage such pain, which is still undertreated in Brazil as well as in other countries[5,12,13].

CONCLUSION

Data have shown that the proposed intervention has generated mild changes in postoperative analgesic prescriptions, however they were enough to promote pain intensity decrease in some studied moments.

REFERENCES

1. Kehlet H, Holte K. Effect of postoperative analgesia on surgical outcome. Br J Anaesth. 2001;87(1):62-72.
2. Kehlet H, Dahl J. The value of "Multimodal" or "Balanced Analgesia" in postoperative pain treatment. Anesth Analg. 1993;7(5):1048-56.
3. Brown AK, Christo PJ, Wu CL. Strategies for postoperative pain management. Best Pract Res Clin Anaesthesiol. 2004;18(4):703-17.
4. Kehlet H. Synergism between analgesics. Ann Med. 1995;27(3):259-62.
5. Apfelbaum JL, Chen C, Mehta SS, et al. Postoperative pain experience: results from a national survey suggests postoperative pain continues to be undermanaged. Anesth Analg. 2003;97(2):534-40.
6. Fletcher D, Fermanian C, Mardaye A, et al. A patient-based national survey on postoperative pain management in France reveals significant achievements and persistent challenges. Pain. 2008;137(2):441-51.
7. Landgraf CS, Marques RC, Pires OC, et al. Avaliação da analgesia pós-operatória em um hospital universitário. Rev Dor. 2010;11(4):319-22.
8. Hartrick CT. Multimodal postoperative pain management. AM J Health Syst Pharm. 2004;61(Suppl 1):4-10.
9. Joshi GP, White PF. Management of acute and postoperative pain. Curr Opin Anaesthesiol. 2001;14(4):417-21.
10. Giancoli LGT, Fonseca MAFLA, Constantino E, et al. Palestra e manual sobre tratamento da dor, não alteraram a prescrição de analgésicos no pós-operatório de cirurgias ginecológicas. Rev Dor. 2012;13(4):338-42.
11. Kehlet H. Multimodal approach to control postoperative pathophysiology and rehabilitation. Br J Anaesth. 1997;78(5):606-17.
12. Sauaia A, Min SJ, Leber C, et al. Postoperative pain management in elderly patients: correlation between adherence to treatment guidelines and patient satisfaction. J Am Geriatr Soc. 2005;53(2):274-82.
13. Charuluxananan S, Thienthong S, Rungreungvanich M, et al. A survey of post anesthetic pain management in Thailand. J Med Assoc Thai. 2009;92(8):1028-32.