Pain relief in medical patients: does clinical judgment and prescribing knowledge suffice?

Erdeljić, Viktorija; Francetić, Igor; Makar-Aušperger, Ksenija; Likić, Robert; Macolić Šarinić, Viola

Source / Izvornik: **Collegium Antropologicum, 2011, 35, 363 - 368**

Journal article, Published version
Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

Permanent link / Trajna poveznica: https://urn.nsk.hr/urn:nbn:hr:105:371912

Coll. Antropol. **35** (2011) 2: 363–368
Original scientific paper

Pain Relief in Medical Patients: Does Clinical Judgment and Prescribing Knowledge Suffice?

Viktorija Erdeljić[1], Igor Francetić[1], Ksenija Makar-Aušperger[1], Robert Likić[1] and Viola Macolić Šarinić[2]

[1] University of Zagreb, Zagreb University Hospital Center, Division of Clinical Pharmacology, Department of Medicine, Zagreb, Croatia

[2] Agency for Medicinal Products and Medical Devices, Zagreb, Croatia

A B S T R A C T

The aim of this study was to evaluate the quality of pain management in hospitalised patients. A cross-sectional study design that included all medical patients experiencing pain was used. Out of 167 patients hospitalized at the Department of Medicine at the University Hospital Zagreb, 41 patients were experiencing pain and 40 out of them received analgesics. Twenty-two out of 38 patients were treated for malignant pain, 16 for non-malignant pain, and 2 patients could not be classified. Adequate pain relief was reported in less than 25% of patients in both groups. Our study revealed under-prescribing of combination therapy, low utilization rates of strong opioids and prevailing »as needed« prescribing practice. In conclusion, unsatisfactory pain management in medical patients is often present if left solely to the clinical judgement and knowledge of the prescribing physician. Regular pain assessment, evidence-based guidelines, education and regular audits of implementation of these measures are a prerequisite for effective pain treatment, and should all be employed in patients experiencing pain.

Key words: *pain, pain management, outcome assessment, medical patients, patient satisfaction*

Introduction

Pain accompanying malignant or chronic non-malignant disease should be considered unnecessary. Uncontrolled pain compromises patients' physiological as well as psychological functioning, and substantially lowers their quality of life[1,2]. The overall social and economic effects of uncontrolled pain are not easy to evaluate in terms of delayed healing, prolonged recovery and length of stay, yet some studies have shown that adequate pain control is cost-effective[3,4], and leads to reduction of morbidity and improvement in clinical outcomes[5–9]. The existence of unnecessary pain is common in research reports on pain management in hospital patients, as well as among outpatients. It has been reported that about three--quarters of patients experience moderate to severe pain while in hospital[10–12]. Barriers to satisfactory pain management include nurses' and physicians' insufficient knowledge and education about pain assessment and treatment[13–16], organizational issues[17] as well as concerns about the risk of addiction to opioids[18]. Evidence-based guidelines and education are recognized tools for improvement of pain management[19,20].

There is a wide range of medications available to the physician in pain treatment. To help in rational clinical decision-making, the World Health Organization has established therapeutic guidelines in the pharmacologic treatment of pain[21]. Adherence to this simple guideline with appropriate dosing of drugs can provide adequate pain relief in 70–90% of patients[22]. The concern of many physicians and patients about addiction to opoids is a major obstacle to adequate pain relief, although it has been suggested that less than 1 in 1000 patients using opioids for pain relief would be expected to develop an addiction[23]. A recent review by Hojsted J and Sjogren P[24] suggests that it seems appropriate to be aware of the problems associated with addiction during long-term opioid treatment, since the review of literature indicate that the prevalence of addiction varies from 0–50% in chronic non-malignant pain patients, and from 0–7.7% in cancer patients[25]. Nevertheless, it should not be the excuse for undertreatment of pain.

Most published studies tackle management strategies of departments dealing with patients in pain (Surgery,

Received for publication November 6, 2008

Oncology, Emergency Department, Neurology), often disregarding other subgroups of patients. We assessed current practices of pain management and satisfaction with pain relief in medical patients, whose pain management was left to the clinical judgment and knowledge of the prescribing physician. Since this was the first study dealing with pain management strategies in our hospital, no coherent previous information on pain relief and patient satisfaction was available. At the time of this study there were no local guidelines for pain treatment in our institution.

Materials and Methods

Study design and patient population

A group of six clinical pharmacologists conducted a cross-sectional study that included all patients hospitalized at the Department of Medicine at the University Hospital Zagreb receiving analgesics on the day of the study (February 25th, 2005). A structured questionnaire was developed based on the American Pain Society patient outcome questionnaire[26]. Data were collected by patient interview and from hospital charts and medical histories. Patients' experience of pain was assessed on a numeric rating scale (NRS) ranging from 1 to 10. Patients indicated their experience of pain on NRS; 0 meaning the absolute absence of pain, and 10 meaning disabilitating pain. According to literature data[27] and in agreement with patients, we set the threshold indicating inadequate pain control for worst pain at 5 (moderate pain), and the threshold for average pain at 3 (mild pain). The threshold for most severe pain was set at 7. The aims of the study were explained, and an informed oral consent was obtained from all patients prior to inclusion. Since this was an observational study, the ethical approval was not considered necessary.

TABLE 1
DEMOGRAPHICS AND TYPE OF PAIN

	Malignant pain		Non-malignant pain		p-value
	Mean	SD	Mean	SD	
Age	55	17	58	16	n.s.*
	N	%	N	%	
Sex					n.s.
Male	11	50	8	50	
Female	11	50	8	50	
Type of pain					
Acute	4	18	8	50	0,037
Chronic	18	82	8	50	
Continuous	13	59	7	44	n.s.
Periodical	9	41	9	56	
Diagnosis					
	Acute leucosis	3	Headache	3	
	Ca ventriculi	3	Abdominal pain	3	
	Seminoma	2	Pancreatitis	2	
	Plasmocytoma	2	Chest pain	2	
	Ca pulmonum	2	Arthritis	1	
	Osteosarcoma	1	Collagenosis	1	
	Meta ossei	1	Mucositis	1	
	Ca recti	1	Herpes zoster	1	
	Ca coli	1	Nephrocolicae	1	
	Npl abdominis	1	Haemophilia	1	
	Non-Hodgkin lymphoma	1			
	Npl glandulae suprarenalis	1			
	Npl pancreatic	1			
	Npl ducti choledochi	1			
	Npl ovarii	1			
TOTAL		22		16	

*Difference between groups not statistically significant, Ca – carcinoma, Npl – neoplasm, SD – Standard Deviation

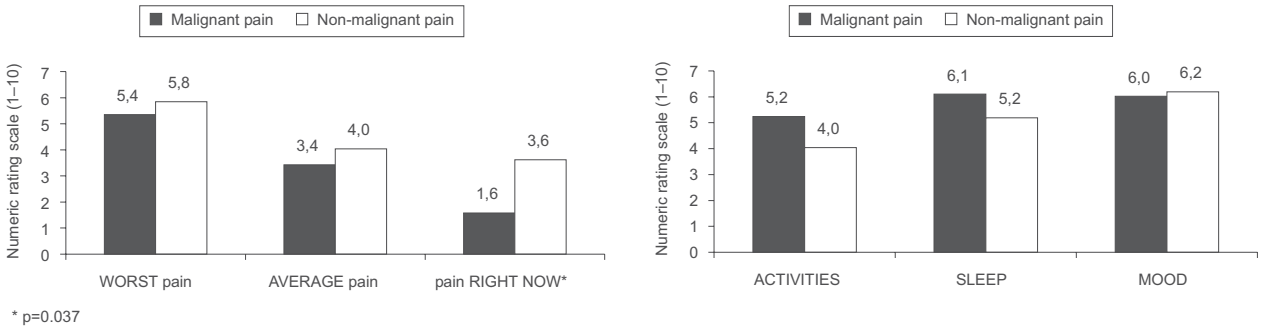

Fig.1. Pain and pain impact ratings.

TABLE 2
PAIN MANAGEMENT AND ADVERSE EFFECTS OF PAIN THERAPY

	Malignant pain (N=22)		Non-malignant pain (N=16)		p-value
	N	%	N	%	n.s.*
Analgesics					
Non-opioids	4	18	8	50	0,037
Opioids**	20	91	11	69	
Weak opioids	19	82	9	56	n.s.
Strong opioids	6	27	2	1	n.s.
Combination therapy					n.s.
Non-opioids + Weak opioids	1				
Non-opioids + Strong opioids	1		0		
Weak opioids + Strong opioids	4		0		
TOTAL	6	27	3	19	
Analgesics in continuous pain					n.s.
»As needed«	6	46	4	57	
Scheme	7	54	3	4	
TOTAL	13		7		
Analgesics in chronic pain					n.s.
»As needed«	10	56	5		
Scheme	8	44	3		
TOTAL	18		8		
Other pain treatment strategies					n.s.
Radiation	1		0		
Cold compress	0		1		
Physical therapy	0		1		
Massage	0		1		
TOTAL	1		3		
Adjuvant therapy					n.s.
Benzodiazepine	5		3		
Benzodiazepine + corticosteroid	1		0		
Corticosteroids	2		3		
Muscle relaxant	1		0		
TOTAL	9		6		
Adverse effects of pain therapy					n.s.
Constipation	2		0		
Sleepiness	0		2		
Nausea	0		2		
Sleepiness + nausea	1		0		

*Difference between groups not statistically significant, **Alone and in combination

Statistics

Standard descriptive statistics were used to describe the study population, their utilization of analgesics, pain and pain impact scores, adverse effects and satisfaction with the treatment received. The normality assumption was tested using the Kolmogorov-Smirnov test. Means and Standard Deviations (SD) were calculated for age, and NRS. For categorical data proportions were calculated and analyzed using the χ^2. Continuous data were statistically compared using the t-test for independent samples. Statistical significance was set at $p<0.05$. All tabulations and statistical analysis were done using Statistica for Windows, Version 5.5, StatSoft, Inc. (2000).

Results

Forty-one out of 167 hospitalized at the Department of Medicine on the day of the study, 41 experienced pain and 40 received analgesic therapy. One patient with occasional headaches was not prescribed analgesics. Because of differences in perception, attitudes and treatment of malignant and non-malignant pain, we separately evaluated the quality of pain management in these groups. Two patients were excluded from the analysis, since it was not possible to classify their pain as malignant or non-malignant. Out of 38 patients with diagnosed clinical condition, 22 (58%) were receiving analgesics for malignant pain, and 16 patients for non-malignant pain (42%). Age and sex were comparable in both groups. Patients with malignant pain were experiencing more common chronic and continuous pain, as compared to patients with non-malignant pain (Table 1). Ratings of worst and average pain were comparable for patients with malignant and non-malignant pain, only current pain was rated significantly higher in patients with non-malignant pain (Figure 1). Although the impact of pain on general activities and sleep was rated higher in the group of patients with malignant pain as compared to patients with non-malignant pain, it did not reach statistical significance. The impact of pain on mood was rated similarly in both groups (Figure 1). One patient with malignant pain and 2 patients with non-malignant pain were not able to comprehend the NRS.

Detailed data on pain management and adverse effects of pain therapy are shown in Table 2. Non-opioids were significantly more prescribed for non-malignant pain as compared to malignant pain, including acetaminophen, diclofenac, ketoprofen, piroxicam and aspirin. Both weak (tramadol) and strong opioids (morphine sulphate and fentanyl), were more commonly prescribed in patients with malignant pain, although not significantly. Combination therapy was rather scarce in both groups, prescribed in only 6 patients with malignant, and 3 patients with non-malignant pain. Overall, approximately 50% of all patients with continuous (10/20) and chronic pain (15/26) were prescribed analgesics on »as needed« basis, without significant difference between groups. Other pain management strategies were employed in only 1 patient with malignant pain and 3 patients with non-malignant pain. Approximately one third of patients in both groups were prescribed adjuvant pain therapy. Four pa-

TABLE 3
WAITING TIME FOR ANALGESICS AND PATIENT'S SATISFACTION WITH ANALGESIA

	Malignant pain		Non-malignant pain		p-value
	N	%	N	%	n.s.**
Waiting time for analgesics*					
≤10 min.	14	74	10	71	
11–20 min.	1	5	0	0	
21–30 min.		16	2	14	
31–60 min.	0	0	0	0	
>60 min.	0	0	1	7	
never asked for pain medication	1	5	1	7	
TOTAL	19		14		
Patients' satisfaction*					n.s.**
Very satisfied	3	15	1	7	
Satisfied	11	55	8	57	
Moderately satisfied	4	20	2	14	
Moderately unsatisfied	2	10	1	7	
Unsatisfied	0	0	2	14	
Very unsatisfied	0	0	0	0	
TOTAL	20		14		

* Missing data are due to patients not being able to remember their waiting times, or refusing to answer, ** Difference between groups not statistically significant

tients in each group had complaints that could be attributed to analgesic therapy (tramadol). Adverse effects of pain therapy were generally mild and recorded in 14% of patients treated for malignant pain and 25% patients treated for non-malignant pain. In all patients except one they were recorded in patients receiving strong opioids.

Waiting time for analgesics after demand was similar in both groups, with approximately 2/3 of patients in both groups waiting <10 minutes on analgesic after demand. Satisfaction level with the pain treatment was high. Comparable rates of patients with malignant and non-malignant pain were satisfied and very satisfied with pain treatment (Table 3).

Discussion and Conclusion

There was no significant difference in pain management between evaluated groups. Pain management was unsatisfactory in both patients with malignant, as well as in patients with non-malignant pain. Overall, satisfactory pain relief was recorded in only 5/21 (24%) patients with malignant pain and in 3/14 (21%) with non-malignant pain, as indicated by worst pain scores ≤5 and average pain scores ≤3.

Although pain scores collected in similar studies were even higher than recorded in our study[10,11,28–30], we were not satisfied with the fact that the average rating for worst pain in both groups was above the threshold of 5[10–12]. Five patients with malignant and 7 patients with non-malignant pain rated their worst pain in the most severe range of ≥7. The impact of pain on general activities, sleep and mood was rated higher in patients with malignant pain. The clinical significance of recorded pain scores in our study was illustrated by high interference of pain with general activities, sleep and mood (all rated >5, except for impact of pain on general activities in patients with non-malignant pain; Figure 1). Pain and pain impact scores were to some extent higher in patients with non-malignant pain, but only the difference in rating of current pain reached statistical significance. This may be explained by differences in physicians' and nurses' attitudes toward the clinical significance of non-malignant as compared to malignant pain, and according to that, to underestimation and undertreatment of non-malignant pain.

Although more than half of the patients were experiencing continuous/chronic pain, approximately half of them were receiving analgesics »as needed«. Without a regular dosing scheme, a steady state blood level cannot be reached in order for the drug to be continuously effective, and interruption of a regular scheme may cause a reappearance of pain as blood levels of the analgesic decline[31]. In one study by Owen at al.[32] 65% of patients receiving pain medication on »as needed« basis stated that they would wait until they had severe pain before asking for analgesic.

The main therapy for both malignant and non-malignant pain was a weak opioid (tramadol). The rate of prescription of strong opioids was unsatisfactory, especially in patients with malignant pain, as compared to other studies[17,33] with typical morphine prescription rate over 50%. Although not directly assessed by our study, we hypothesize that the reason for under-prescription of strong opioids for malignant pain is overestimation of the probability for addiction to prolonged use of narcotics, as this has been recognized as one of the reasons for unsatisfactory pain relief, as well as fear of adverse effects of therapy with strong opioids[1,18,34]. Although all, except one, recorded adverse effects of pain therapy was attributed to therapy with strong opioids, they were mild in all recorded cases. In one patient treated with tramadol, constipation occurred as a suspected adverse effect.

Combination therapy, encouraged for more effective analgesia and attenuation of opioid-induced adverse reactions, was clearly underprescribed in both groups. Although it has been suggested that nurses often compound the problem of physicians' under-prescribing of analgesics by under-administration of these drugs[35,36], the waiting times for analgesia recorded during our study were short, which indirectly indicated good compliance in administration of prescribed analgesics. Despite high pain and pain impact scores as (more or less) objective parameters that indicate unsatisfactory pain management, patients' satisfaction levels with pain relief were high. However, high patient satisfaction rates have not been established as an evidence for efficient pain management, but may indicate patients' tendency to minimize pain and discomfort. There are many factors to be taken into consideration in evaluation of patients' pain behaviour. The role of physicians and nurses in pain management is important and well documented, however the patients are often regarded merely as passive care recipients[37]. Furthermore, it has been suggested that the patients' powerlessness in the hospital setting would make them likely to deny the dissatisfaction with hospital care[38]. Similar behavior was also noted during our study and remains illustrated by 4 patients refusing to assess their satisfaction with received pain treatment and by the lack of filed reports on possible adverse effects of pain therapy.

Nurses' and physicians' knowledge about pain management strategies, their attitudes toward pain and pain relief, and the compliance in administration of prescribed analgesics were not evaluated during this study. However, our results indirectly demonstrated flaws in physicians' knowledge of clinical assessment and treatment of pain. Good compliance in administration of drugs is indicated by low waiting times for analgesics upon request. Data on efficacy of pain treatment in other Departments are lacking, thus conclusions about differences in quality of pain management among different medical specialities at our hospital cannot be drawn.

We believe that lack of objective assessment of pain and pain relief was the main barrier to satisfactory pain treatment for medical patients. Regular measuring and documentation of pain is essential for adequate pain management[39,40]. It has been shown that pain frequently

goes unrecognized by clinicians, when pain management is based solely on their assessment[41,42].

In conclusion, our study pointed to the need of establishing a local pain management quality improvement program, since pain management remains inadequate if based only on the clinical judgement and knowledge of the prescribing physician. Further studies and pain management quality improvement programs focusing on disregarded subgroups of patients (medical patients, geriatric population, etc.) are clearly needed.

REFERENCES

1. MARKS RM, SACHAR EJ, Ann Intern Med, 78 (1973) 173. — 2. CRAIG K, Emotional aspects of pain. In: MELZACK R, WALL PD (Eds.) The Textbook of Pain (Churchill Livingstone, London, 1984). — 3. STADLER M, SCHLANDER M, BRAECKMAN M, NGUYEN T, BOOGAERTS JG, J Clin Anesth, 16 (2004) 159. — 4. GUPTA A, ASHBURN M, BALANTYNE J, Anesthesiol Clin, 29 (2011) 123. — 5. YEAGER MP, GLASS DD, NEFF RK, BRINCK-JOHNSEN T, Anesthesiology, 66 (1987) 729. — 6. RAWAL N, Eur J Anesthesiol, 12 (1995) 47. — 7. FOLLIN SL, CHARLAND SL, Ann Pharmacother, 1 (1997) 1068. — 8. BALLANTYNE JC, CARR DB, DEFERRANTI S, SUAREZ T, LAU J, CHALMERS TC, ANGELILLO IF, MOSTELLER F, Anesth Analg, 86 (1998) 598. — 9. CAPDEVILA X, BARTHELET Y, BIBOULET P, RYCKWAERT Y, RUBENOVITCH J, D'ATHIS F, Aneshesiology, 91 (1999) 8. — 10. COHEN F, Pain, 9 (1980) 265. — 11. WEISS D, SRIWATANAKUL K, ALLOZA JL, WEINTRAUB M, LASAGNA L, Anesth Analg, 62 (1983) 6270. — 12. BRUSTER S, JARMANN B, BOSANQUET N, WESTON D, ERENS R, DELBANCO TL, BMJ, 09 (1994) 1542. — 13. GROSSMAN SA, SHEIDLER VR, J Med Educ, 60 (1985) 552. — 14. WILSON JF, BROCKOPP GW, KRYST S, STEGER H, WITT WO, Pain, 50 (1992) 251. — 15. VON ROENN JH, CLELAND CS, GONIN R, HATFIELD AK, PANDYA KJ, Ann Intern Med, 119 (1993) 121. — 16. SCHMIDT K, ELAND J, WEILER K, J Pediatr Oncol Nurs, 11 (1994) 4. — 17. WILDER-SMITH OH, MOHRLE JJ, MARTIN NC, Eur J Pain, 6 (2002) 189. — 18. MORGAN JP, American opiophobia: customary underutilization of opioid analgesics. In: HILL CS JR, FIELDS WS (Eds) Drug Treatment of Cancer Pain in a Drug-Oriented Society: Advances in Pain Research and Therapy (Raven Press, New York, 1989). — 19. VALLANO A, LLINARES J, ARNAU JM, MARTORELL M, GIRONA L, LAPORTE JR, Int J Clin Pharmacol Ther, 41 (2003) 165. — 20. BARDIAU FM, TAVIAUX NF, ALBERT A, BOOGAERTS JG, STADLER M, Anesth Analg, 96 (2003) 179. — 21. WORLD HEALTH ORGANIZATION, Cancer Pain Relief, Geneva, Switzerland: World Health Organization, 1986. — 22. MING WAH LI J, Med Clin N Am, 86 (2002) 771. — 23. PORTER J, JICK H, N Eng J Med, 02 (1980) 123. — 24. HOISTED J, SJOGREN P, Eur J Pain, 11 (2007) 490. — 25. HOJSTED J, NIELSEN PR, GULDSTRAND SK, FRICH L, SJOGREN P. Eur J Pain, 14 (2010) 1014. — 26. American Pain Society Quality of Care Committee, Quality Improvement Guidelines for the Treatment of Acute Pain and Cancer Pain, JAMA 274 (1995) 1874. — 27. BOOKBINDER M, KISS M, COYLE N, Improving pain management practices. In: MCGUIRE DB, YARBRO CH, FERRELL BR (Eds) Cancer Pain Management (JONES & BARTLETT, Boston, 1995). — 28. WARD SE, GORDON D, Pain, 56 (1994) 299. — 29. MIASKOWSKI C, NICHOLS R, BRODY R, SYNOLD T, J Pain Symptom Manage, 9 (1994) 5. — 30. BOOKBINDER M, COYLE N, KISS M, GOLDSTEIN ML, HOLRITZ K, THALER H, GIANELLA A, DERBY S, BROWN M, RACOLIN A, HO MN, PORTENOV RK, J Pain Symptom Manage, 12 (1996) 334. — 31. Clinicians' quick reference guide to postoperative pain management in adults. Pain Management Guideline Panel. Agency for Health Care Policy and Research, US Department of Health and Human Services, J Pain Symptom Manage, 7 (1992) 214. — 32. OWEN H, MCMILLAN V, ROGOWSKI D, Pain, 41 (1990) 303. — 33. ZECH DF, GROUND S, LYNCH J, HERTEL D, LEHMANN KA, Pain, 6 (1995) 65. — 34. LANDER, J, Pain, 42 (1990) 15. — 35. MATHER L, MACKIE J, Pain, 15 (1983) 271. — 36. BOER C, TREEBUS AN, ZUURMOND WW, DE LANGE JJ, Anaeshesia, 52 (1997) 1177. — 37. LANDER J, Br J Addict, 85 (1990) 803. — 38. FAGERHAUGH S, STRAUSS A, Politics of Pain Management: Staff Patient Interaction (Addison-Wesley, Menlo Park, CA, 1977). — 39. CAMPANESE C, AORN J, 64 (1996) 937. — 40. HARMER M, DAVIES KA, Anesthesia, 5 (1998) 424. — 41. DONOVAN M, DILLON P, MCGUIRE L, Pain, 0 (1987) 69. — 42. AU E, LOPRINZI CL, DHODAPKAR M, NELSON T, NOVOTNY P, HAMMACK J, O'FALLON J, J Clin Oncol, 12 (1994) 2751.

V. Erdeljic

University of Zagreb, Zagreb University Hospital Center, Division of Clinical Pharmacology, Department of Medicine, Kišpatićeva 12, 10000 Zagreb, Croatia
e-mail: verdeljic@gmail.com

LIJEČENJE BOLI U INTERNISTIČKIH BOLESNIKA: DA LI SU KLINIČKA PROCJENA I ZNANJE O PROPISIVANJU ANALGETIKA DOVOLJNI?

SAŽETAK

Svrha ovog istraživanja bila je procijeniti kvalitetu liječenja boli u hospitaliziranih internističkih bolesnika. Istraživanje je dizajnirano kao presječno, a uključilo je sve internističke bolesnike hospitalizirane na Internoj klinici Kliničkog bolničkog centra Zagreb koji su trpjeli bol. Od ukupno 167 hospitaliziranih bolesnika na Internoj klinici Kliničkog bolničkog centra Zagreb, 41 bolesnika koji su naveli da trpe bolove, 40 bolesnika primalo je analgetike. Dvadeset i dva od 8 bolesnika liječeno je zbog maligne boli, 16 bolesnika zbog nemaligne boli, dok se za 2 bolesnika uzrok boli nije mogao svrstati u jednu od navedenih skupina. Primjerena kontrola boli zabilježena je u manje od 25% bolesnika u obje istraživane skupine. Naše je istraživanje ukazalo na nedovoljno propisivanje kombinirane analgetske terapije, nisku stopu propisivanja jakih opioida te prevladavajuće prepisivanje analgetika »prema potrebi«. Zaključno, liječenje boli u internističkih bolesnika često je prepušteno samo kliničkoj procjeni i znanju liječnika koji propisuje analgetik. Redovita procjena boli, smjernice za liječenje boli temeljene na dokazima, edukacija i redovite kontrole provođenja uvedenih mjera su pretpostavke za učinkovito liječenje boli, i trebaju biti primijenjeni u svih bolesnika koji trpe bol.