A Survey of Post Anesthetic Pain Management in Thailand

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Objectives: *The Royal College of Anesthesiologists of Thailand aimed to study status of post anesthetic pain management to determine factors for quality improvement of anesthesia services in Thailand.*
Material and Method: *A pre-planned structured questionnaire regarding demographic variables, early and late postoperative pain management, establishment of the post anesthesia care unit (PACU) was requested to be filled in by nurse anesthetists attending the refresher course lectures of the Royal College of Anesthesiologists of Thailand in August 2007.*
Results: *Of 280 questionnaires, 261 respondents (93%) returned the questionnaires. Most of the respondents (94%) worked in government hospitals. One-third practiced in hospitals without an anesthesiologist. Twenty percent of respondents reported absence of PACU in their hospitals. Anesthesia personnel took responsibility of and prescribed pain medication in the PACU in 69% and 55% respectively. Intravenous route was the most frequent mode of pain medication administered. Percentages of respondents who reported no post anesthetic pain management guidelines and no record of pain assessment in PACU were 39% and 49% respectively. At the surgical ward, surgeons played major roles for postoperative management (91%) and intramuscular injection was the most preferable route. Seventy-one percent of respondents reported no record of pain assessment.*
Conclusion: *Post anesthetic pain management continues to be undermanaged. Establishment of PACU, increasing the number of anesthesia personnel including MD anesthesiologists, providing clinical guidance for post anesthetic pain management are suggested corrective strategies. Establishment of acute pain service in big hospitals should be promoted.*

Keywords: *Anesthetics, Pain measurement, Pain, Postoperative, Practice guidelines, Quality control*

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Postoperative pain relief continues to be a major medical challenge. Pain management has been given as a high priority by the medical profession[1]. Therefore, improvement in perioperative pain management not only is desirable for humanitarian reasons, but is also important for its potential to reduce postoperative morbidity[2-5] and mortality[3]. The Royal College of Anesthesiologists of Thailand had organized the Thai Anesthesia Incidents Study (THAI Study) to investigate the perianesthetic complications, but there is no large scale data regarding postoperative analgesia management[6-8]. Therefore, the purpose of the present study was to survey the postoperative pain management in the Thai hospitals regarding early and within postoperative care period and establishment

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of the post anesthesia care unit (PACU) through the experience of nurse anesthetists during the early postoperative period and in the surgical ward.

Material and Method

During the refresher course lectures of the 66th annual meeting of the Royal College of Anesthesiologists of Thailand for nurse anesthetists in August 2007, a structured questionnaire was distributed to all participants attending the meeting in the morning. All participants were requested to fill in the questionnaire and send it to the registration desk on the same day. The structured questionnaire comprised of demographic, administrative data and postoperative pain management in the respondents' institution. Response of questionnaires was based on voluntary basic. Descriptive statistics was used for analysis of data using SPSS program version 13.

Results

Of all 280 questionnaires distributed, there were 261 respondents (93.2%). Two-hundred and fifty-one responders were female (96.2%), whereas 10 responders were male (3.8%). Minimal and maximal age of responders was 28 years and 58 years old with mean age of 40.7 $\pm$ 6.7 years old. The demographic and administrative data of respondents are shown in Table 1. The postoperative analysis profiles at

Table 1. Demographic and administrative data of respondents

	Number	%
Experience of anesthesia service (n = 261)		
< 1 year	5	1.9
1-5 years	37	14.2
6-10 years	46	17.6
11-15 years	67	25.7
16-20 years	44	16.9
> 20 years	62	23.8
Experience of postoperative analgesia care		
Yes	250	95.8
No	11	4.2
Government hospitals	247	94.6
Private hospitals	14	5.4
Ministry of Education	22	8.4
Ministry of Public Health	205	78.5
Hospital accredited (HA)	125	74.9
Hospital beds (n = 258)		
< 60 beds	23	8.8
60-120 beds	50	19.2
121-200 beds	19	7.3
201-500 beds	101	38.7
> 500 beds	65	24.9
Anesthetic cases per year (n = 252)		
< 500 cases	51	19.5
501-1,000 cases	22	8.4
1,001-5,000 cases	86	33.0
5,001-10,000 cases	39	14.9
> 10,000 cases	54	20.7
Number of anesthesiologists (n = 255)		
0 anesthesiologist	97	37.2
1-5 anesthesiologists	125	47.9
6-10 anesthesiologists	14	5.4
11-20 anesthesiologists	11	4.2
> 20 anesthesiologists	9	3.4

Table 2. Early postanesthetic analgesia management profiles

	Number	%
Postanesthesia care unit (PACU)		
Yes	206	78.9
No	54	20.7
PACU authorization		
Anesthesia division	180	69.0
Surgical unit	81	31.0
Prescriber of analgesics in PACU		
Anesthesia personnel only	81	31.0
Anesthesia personnel mostly	65	24.9
Surgeon only	37	14.2
Surgeon mostly	23	8.8
Undetermined	55	21.1
Most frequently analgesics used		
Morphine	100	38.3
Meperidine	87	33.3
Fentanyl	84	32.2
Tramadol	36	13.7
Route of analgesics administered		
Intramuscular	9	3.4
Intravenous	197	75.5
Undetermined	55	21.1
Use of guidelines at PACU		
Yes	90	34.5
No	104	39.8
Not known	10	3.8
Undetermined	57	21.8
System of pain assessment at PACU		
Yes	103	39.5
No	104	3.98
Undetermined	207	20.7
Record of pain assessment at PACU		
Yes	76	29.1
No	128	49.0
Undetermined	57	21.8

Table 3. Postoperative pain management at surgical ward

	Number	%
Precriber of analgesia		
Anesthesia personnel: only	2	0.8
Anesthesia personnel: mostly	13	5.0
Surgeons: only	134	51.3
Surgeons: mostly	105	40.2
First order analgesics used		
Morphine	137	52.5
Pethidine	137	52.5
Fentanyl	9	3.4
Tramadol	47	18.0
Routes of administration of analgesics		
Intramuscular	190	72.8
Intravenous	58	22.2
Undetermined	13	5.0
System of pain assessment		
Yes	80	30.7
No	165	63.2
Undetermined	16	6.1
Record of pain assessment		
Yes	55	21.1
No	187	71.6
Undetermined	75	28.7

the early postoperative period and in the surgical ward are demonstrated in Table 2 and Table 3 respectively.

Discussion

Inadequate perioperative pain management has been observed for decades[9,10]. The establishment of an organization for specific management of post-operative pain relief was also proposed more than 40 yrs ago[11]. In 1985 the first acute pain services were introduced in the United States[12,13], in Germany[14] and other countries[1]. The present report is the first large scale survey of acute postoperative pain management in Thailand. In medical schools, anesthesia residents take the role in postoperative visits, whereas nurse anesthetists take a major role of postoperative visits in most Thai hospitals. Moreover, in the Thai Anesthesia Incidents Study (THAI Study) of anesthetic adverse outcomes and the Thai Anesthesia Incidents Monitoring Study (Thai AIMS), nurse anesthetists involved in 73-99% of anesthesia services across various types of hospitals[6,15]. Therefore, the authors audited the acute postoperative pain management through the experience of nurse anesthetists attending the refresher course lectures organized by the Royal College of anesthesiologists of Thailand, who came from hospitals in all regions of the country.

The response rate (93%) of audit questionnaire was quite high. Most of respondents (96.2%) were female whose mean ($\pm$ SD) of age of 40.7 ($\pm$ 6.7) years old. Only 1.9% of respondents had anesthesia experience less than 1 year. Ninety-four percent, 95% and 78% were nurse anesthetists who had experience of postoperative analgesia care, worked in government sectors and worked as personnel in the Ministry of Public Health. Two-thirds of respondents worked in hospitals which sized between 60-500 beds, whereas, a quarter of responders worked in hospitals with more than 500 beds. The present results also showed the proportions of 37% and 47% of respondents who worked in hospitals without an anesthesiologist and with 1-5 anesthesiologists. Moreover, 74% of respondents worked in hospitals that passed the national hospital accreditation. Therefore, the respondents might represent Thai nurse anesthetists for this audit survey.

For the post anesthetic analgesia management profiles, it is interesting that 20% of respondents worked in hospitals that there was no PACU. This is an important issue for quality improvement given the fact that 31% of respondents revealed that surgeons took responsibility of the PACU. This was correlated with 37% of respondents who worked in hospitals without MD anesthesiologists. According to data from the Ministry of Public Health in 2009, there were 21 general or provincial hospitals without any MD anesthesiologists. Recently, the problem regarding shortage of MD anesthesiologists has been shown to be a contributing factors of intra-operative cardiac arrest after spinal anesthesia[16]. Therefore, not only establishment of the PACU but also increasing numbers of MD. anesthesiologists should be suggested for the policy-makers in Thailand.

More than half of the respondents revealed that anesthesia personnel were the person who prescribed analgesics in the PACU. Surgeons also prescribed the pain medication in about one-fourth of the questionnaires. The most frequently prescribed medications were morphine (38%), meperidine (33%), fentanyl (32%) and tramadol (13%) respectively. Intravenous injection was the most common route of administration. It was also interesting that 34%, 39% and 29% of respondents reported usage of the guideline pain assessment system and record of pain assessment. There were also important topics for quality improvement in the PACU. In Thailand

Pitimana-aree et al launched a survey of opinion and reported used of clinical practice guidelines of the Royal College of Anesthesiologists of Thailand and showed low level of awareness and reported use of guidelines. The survey reported that announcement of guidelines during the annual meeting of the Royal College was the best implementation strategy[17].

In the surgical ward, anesthesia personnel took a minor role for prescribing analgesics while surgeons prescribed pain medication in 91% of respondents. The most frequently prescribed medication in the surgical ward was morphine, meperidine and tramadol. In contrast to the postoperative care in the PACU, 72% of respondents reported intramuscular route as most frequent mode of analgesics administration. Moreover, system of pain assessment and record of pain assessment were performed in lower proportion among the respondents.

There are a few limitations in the present report. Firstly, the present study was a survey through experience of only nurse anesthetists. The attendants of refresher course lectures of the Royal College of Anesthesiologists of Thailand comprised of one or two nurse anesthetists from various types of hospitals across Thailand. However, this also represented the hospitals without an anesthesiologist. Secondly, the present survey got information as a retrospective survey of event or experience. The effect of recall bias and passage of time should be considered. However, the authors believe that respondents may be able to recall their usual experience or practice. Thirdly, there were some missing data due to incomplete answers in the questionnaires.

In summary, the present survey revealed the inadequacies in postoperative pain management regarding early and postoperative care in Thailand. Establishment of the PACU, increasing the number of anesthesia personnel including anesthesiologists, and practice guidelines for postoperative pain management are suggested corrective strategies. Establishment of acute pain service in big hospitals should be promoted.

References

1. Werner MU, Soholm L, Rotboll-Nielsen P, Kehlet H. Does an acute pain service improve postoperative outcome? Anesth Analg 2002; 95: 1361-72, table.
2. Ballantyne JC, Carr DB, deFerranti S, Suarez T, Lau J, Chalmers TC, et al. The comparative effects of postoperative analgesic therapies on pulmonary outcome: cumulative meta-analyses of randomized, controlled trials. Anesth Analg 1998; 86: 598-612.
3. Rodgers A, Walker N, Schug S, McKee A, Kehlet H, van Zundert A, et al. Reduction of postoperative mortality and morbidity with epidural or spinal anaesthesia: results from overview of randomised trials. BMJ 2000; 321: 1493.
4. Kehlet H, Holte K. Effect of postoperative analgesia on surgical outcome. Br J Anaesth 2001; 87: 62-72.
5. Beattie WS, Badner NH, Choi P. Epidural analgesia reduces postoperative myocardial infarction: a meta-analysis. Anesth Analg 2001; 93: 853-8.
6. Charuluxananan S, Punjasawadwong Y, Suraseranivongse S, Srisawasdi S, Kyokong O, Chinachoti T, et al. The Thai Anesthesia Incidents Study (THAI Study) of anesthetic outcomes: II. Anesthetic profiles and adverse events. J Med Assoc Thai 2005; 88 (Suppl 7): S14-29.
7. Yimyaem PR, Kritsanaprakornkit W, Thienthong S, Horatanaruang D, Palachewa K, Tantanatewin W, et al. Postoperative pain management by acute pain service in a University Hospital, Thailand. Acute Pain 2006; 8: 161-7.
8. Kumwilaisak K, Burimsittichai R, Charuluxananan S, Premsamran P, Niruthisard S. Factors involving patient satisfaction on postoperative pain management at King Chulalongkorn Memorial Hospital. Chula Med J 2006; 50: 17-28.
9. Papper EM, Brodie BB, Rovenstine EA. Postoperative pain; its use in the comparative evaluation of analgesics. Surgery 1952; 32: 107-9.
10. Bridenbaugh LD. The 1990 John J. Bonica lecture: acute pain therapy-whose responsibility? Reg Anesth 1990; 15: 219-22.
11. Postoperative pain [editorial]. Anaesth Intensive Care 1976; 4: 95.
12. Ready LB, Oden R, Chadwick HS, Benedetti C, Rooke GA, Caplan R, et al. Development of an anesthesiology-based postoperative pain management service. Anesthesiology 1988; 68: 100-6.
13. Petrakis JK. Acute pain services in a community hospital. Clin J Pain 1989; 5 (Suppl 1): S34-S41.
14. Maier C, Kibbel K, Mercker S, Wulf H. Post-operative pain therapy at general nursing stations. An analysis of eight year's experience at an anesthesiological acute pain service. Anaesthesist 1994; 43: 385-97.
15. Charuluxananan S, Suraseranivongse S, Jantorn P, Sriraj W, Chanchayanon T, Tanudsintum S, et al. Multicentered study of model of anesthesia

related adverse events in Thailand by incident report (The Thai Anesthesia Incidents Monitoring Study): results. J Med Assoc Thai 2008; 91: 1011-9.
16. Charuluxananan S, Thienthong S, Rungreungvanich M, Chanchayanon T, Chinachoti T, Kyokong O, et al. Cardiac arrest after spinal anesthesia in Thailand: a prospective multicenter registry of 40,271 anesthetics. Anesth Analg 2008; 107: 1735-41.
17. Pitimana-Aree S, Uerpairojkit K, Punjasawadwong Y, Virankabutra T, Charuluxananan S. A survey of awareness, opinion and reported use of clinical practice guidelines (CPG) of the Royal College of Anesthesiologists of Thailand. J Med Assoc Thai 2007; 90: 1853-9.

การสำรวจการบำบัดความปวดหลังการให้ยาระงับความรู้สึกในประเทศไทย

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วัตถุประสงค์*: ราชวิทยาลัยวิสัญญีแพทย์แห่งประเทศไทยมีวัตถุประสงค์เพื่อศึกษาสถานการณ์การบำบัดความปวดหลังการให้ยาระงับความรู้สึกสำหรับการพัฒนาคุณภาพบริการทางวิสัญญีในประเทศไทย*

วัสดุและวิธีการ*: วิสัญญีพยาบาลซึ่งเข้าร่วมประชุมฟื้นฟูวิชาการวิสัญญีของราชวิทยาลัยวิสัญญีแพทย์แห่งประเทศไทย ในเดือนสิงหาคม พ.ศ. 2551 ตอบแบบสอบถามประกอบด้วยข้อมูลประชากรศาสตร์การบำบัดความปวดหลังการให้ยาระงับความรู้สึกทั้งระยะสั้นและระยะยาว ตลอดจนข้อมูลเกี่ยวกับห้องพักฟื้นในโรงพยาบาลที่ปฏิบัติงานอยู่*

ผลการศึกษา*: ผู้ตอบแบบสอบถาม 261 ราย (93%) จากจำนวนแบบสอบถาม 280 ฉบับ โดยร้อยละ 94 เป็นวิสัญญีพยาบาลซึ่งปฏิบัติงานในโรงพยาบาลรัฐบาล ประมาณหนึ่งในสามเป็นวิสัญญีพยาบาลที่ทำงานในโรงพยาบาลซึ่งไม่มีวิสัญญีแพทย์ ร้อยละ 20 ระบุว่าไม่มีห้องพักฟื้นในโรงพยาบาลที่ปฏิบัติงานอยู่ ร้อยละ 69 และ 55 ของผู้ตอบแบบสอบถามตอบว่าบุคลากรวิสัญญีเป็นผู้รับผิดชอบและผู้สั่งยาแก้ปวดในห้องพักฟื้น โดยการฉีดยาเข้าหลอดเลือดดำเป็นวิธีการให้ยาที่นิยมมากที่สุด ร้อยละ 39 และ 49 ของผู้ตอบแบบสอบถามแจ้งว่าไม่มีการใช้แนวทางเวชปฏิบัติและการบันทึกระดับความปวดในห้องพักฟื้น ตามลำดับ ในหอผู้ป่วยหลังการผ่าตัดศัลยแพทย์ (91%) เป็นผู้ทำหน้าที่หลักสำหรับการบำบัดความปวดหลังผ่าตัด และการฉีดเข้ากล้ามเนื้อเป็นวิธีการบำบัดความปวดหลังผ่าตัดที่นิยมมากที่สุด ร้อยละ 71 ของผู้ตอบรายงานว่าไม่มีการบันทึกความปวดแผลหลังผ่าตัดในหอผู้ป่วยศัลยกรรม*

สรุป*: การบำบัดความปวดหลังการให้ยาระงับความรู้สึกในประเทศไทยยังอยู่ในระดับต่ำกว่ามาตรฐาน การจัดตั้งห้องพักฟื้น การเพิ่มจำนวนบุคลากรวิสัญญีตลอดจนวิสัญญีแพทย์ การจัดทำแนวทางพัฒนาสำหรับการระงับปวดหลังการให้ยาระงับความรู้สึกเป็นวิธีที่แนะนำ การจัดตั้งหน่วยการบำบัดความปวดเฉียบพลันควรได้รับการส่งเสริม โดยเฉพาะในโรงพยาบาลขนาดใหญ่*