

Acute pain management in Hong Kong

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A survey was conducted to assess the current status of acute pain management in public hospitals under the management of the Hospital Authority, Hong Kong. Seventeen questionnaires were sent out and 14 replies were received. Seven (50%) hospitals reported that they had formal acute pain services. The situation in Hong Kong is comparable to that in the United Kingdom (44%), the United States (43%), and Australia (33%). Most anaesthetic departments in Hong Kong (90%) with acute pain services have protocols but auditing and continuous quality improvement activities are lacking because of limited resources. The majority (93%) of the responding hospitals feel that the service should be further developed and that this could be done through injecting more resources, increasing training in the area of pain management, and by increasing awareness among professionals and patients.

HKMJ 1996;2: 381-4

Key words: Pain clinics; Analgesics; Pain, postoperative; Palliative treatment

Introduction

The management of acute pain in Hong Kong has been inadequate for many years. Until recently, the main reasons for this have been a lack of knowledge and interest in pain control. Other possible reasons include concern regarding possible addiction, the fear of unwanted side effects of analgesic drugs (e.g. respiratory depression with opioids, gastrointestinal bleeding with non-steroidal anti-inflammatory drugs) and the fear that the physical signs of acute conditions may be masked by good analgesia, making diagnosis more difficult.

With advances in knowledge, especially of the physiology of pain, the pharmacology of analgesic drugs, and the introduction of new equipment such as patient-controlled analgesic (PCA) pumps, the management of acute pain has improved rapidly.

The concept of analgesia teams was introduced in 1976. It was suggested that an anaesthetist, because of familiarity with analgesic drugs and regional analgesia techniques, should play a leading role in the team.¹ The first report, however, on an anaesthesiology-based

post-operative pain management service did not appear until 1988.² In 1990, the problem with acute pain management was addressed in the report of the working party on pain after surgery from the Royal College of Anaesthetists.³ A statement on acute pain management from the Faculty of Anaesthetists, Royal Australasian College of Surgeons, published in 1991, also made recommendations to overcome similar problems.⁴

In 1991, the Agency for Health Care Policy and Research, US Department of Health and Human Services, issued the document titled "Acute pain management: operative or medical procedures and trauma, clinical practice guideline."⁵ These guidelines recognised the widespread inadequacy of pain management and noted that unrelieved post-operative pain could contribute to patient discomfort, longer recovery periods, and higher health care costs.

Acute pain services (APS) started to appear in several hospitals in Hong Kong in the early 1990s. The development of APS in Hong Kong depends not only on advances in knowledge but also on the availability of resources. In 1991, the Hong Kong public hospitals, which provided more than 80% of the medical care to the Hong Kong population, underwent drastic restructuring. All government and subvented hospitals were regrouped into Hospital Authority (HA) hospitals. This restructuring accelerated the development of acute pain management in some hospitals in Hong Kong.

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Although surveys on acute pain management have been conducted by the Co-ordinating Committee in Anaesthesiology (COC) Working Party on Pain Management Services as well as individual hospitals, the information obtained is fragmented. To assess the current status of acute pain management in the HA hospitals in Hong Kong, an independent survey was conducted.

Methods

A questionnaire was mailed to the co-ordinators of pain services run by the anaesthetic departments at 17 HA hospitals in Hong Kong. Only hospitals with one or more full time senior anaesthetic staff were selected. The combined anaesthetic workload of these 17 hospitals consisted of more than 95% of the HA hospital anaesthetic workload. To achieve a prompt response, people were asked to reply by fax. The questionnaire contained 26 parts grouped into four categories. Questions 1 to 5 assessed the characteristics of the individual hospitals; questions 6 to 8 requested information on the manpower situation of the anaesthetic departments. Departments with APS were required to answer question 9, which was divided into 14 parts. The last three questions (10-12) sought suggestions on the future development of APS in Hong Kong.

Results

Seventeen questionnaires were distributed and 14 replies (82%) received. Of the responding hospitals, seven (50%) were located on Hong Kong Island, four (29%) were in Kowloon, and three (21%) were in the New Territories.

The characteristics and the caseloads of the responding hospitals are shown in Tables 1 to 3. The total number of beds (approximately 10 000) provided by these hospitals represents the majority of hospital beds in Hong Kong. The total caseload of the anaesthetic departments (approximately 90 000) and the total number of deliveries in the associated obstetric departments (approximately 44 000) reflect the magnitude of the workload of these responding hospitals.

Of the 14 hospitals that replied, only two (14.3%) had more than 10 senior anaesthetic staff (senior medical officer or above); three (21.4%) hospitals had 7 to 10 senior staff; and two (14.3%) had five to seven senior staff. Seven hospitals, which represent half of the responding hospitals, had four or fewer senior staff. The senior staff to junior staff ratio in these hospitals was approximately 1:2. Six (42.8%) responding hospi-

Table 1. Size of responding hospitals

No. of beds	No. of hospitals (%)
100-300	2 (14)
300-500	1 (7)
500-1000	4 (29)
> 1000	7 (50)

tals had more than 10 junior anaesthetic staff and eight (57.1%) had fewer than 10 junior staff.

Almost all (93%) responding anaesthetic departments provide some form of acute post-operative pain management. Seven (50%) hospitals had formed APS teams. Four (29%) had some form of acute pain management co-ordinated service arranged by an anaesthetist on a part-time basis (CS). Two (14%) hospitals managed post-operative pain by individual anaesthetists with an interest in acute pain management. One (7%) hospital left the problem to the surgeons or the house officers.

For the 11 anaesthetic departments with APS/CS, the staffing, caseload, and pain management methods are shown in Tables 4 and 5. A high proportion of patients received epidural infusions (EI) or opioids via PCA pumps in the post-operative period. The most common forms of post-operative pain management provided by anaesthetists apart from EI and PCA were intramuscular and oral nonsteroidal anti-inflammatory drugs. Other methods used included nerve blocks, intrathecal or epidural opioids, intramuscular or intravenous opioids, and simple oral analgesics.

Ten of the 11 hospitals with APS/CS provided information on practical aspects and activities. These 10 hospitals had an average of 8.8 (range, 2-22) PCA pumps and the average number of syringe pumps for epidural infusions was seven (range, 0-20). Nine of 10 hospitals had protocols for acute post-operative pain management. Only one hospital had a part-time nurse specialist to help with the APS/CS. Five of the 10 hospitals audited their APS/CS year round whereas three of the 10 hospitals did not use any auditing process. One hospital conducted 6-monthly audits and the other did it over a two-month period. Continuous quality improvement (CQI) projects were conducted by only four hospitals with one hospital completing four CQI projects last year. Two hospitals had performed two projects each in the previous year and another had done just one project.

Table 2. Caseload of anaesthetic departments

Caseload per year	No. of hospitals (%)
<1000	1 (7)
1000-3000	5 (35)
3000-5000	0 (0)
5000-10 000	4 (29)
>10 000	4 (29)

The reported overall mortality rate of patients while they were on EI/PCA last year was only three (EI-2, PCA-1), and the causes of death were unrelated to the use of either pain control method.

The question on estimated cost of APS/CS at the individual hospitals was not answered by the majority of respondents. However, all 14 hospitals stated that they would improve their APS/CS and the main problem they perceived was lack of manpower (77%), with a lack of equipment (15%), and lack of consumables (8%) being lesser concerns. Thirteen of the 14 responding hospitals agreed that APS in Hong Kong should be further developed.

Discussion

In the past few years in Hong Kong there has been increased awareness of the importance of effective post-operative pain management. Apart from decreasing mortality and morbidity, it is important to provide pain relief on humanitarian grounds. In 1994, the Hong Kong College of Anaesthesiologists promulgated guidelines on the safe practice of acute pain management to facilitate the development of APS in Hong Kong. In June 1995, a report with recommendations was published by the COC Working Party on Pain Management Services emphasising the need for the establishment of APS.

Table 3. Number of obstetric deliveries

No. of deliveries per year	No. of hospitals (%)
0	2 (14.5)
0-1000	4 (28.5)
1000-3000	0 (0)
3000-5000	4 (28.5)
5000-8000	4 (28.5)

This survey of the current status of acute pain management in Hong Kong, while not comprehensive, does reflect the overall picture of APS in public hospitals under the management of the Hospital Authority of Hong Kong. It is encouraging that 50% of the responding hospitals had APS. This compares well with the United Kingdom, where 44% report having some form of APS.⁶ A recent survey conducted to assess the status of acute pain management in United States hospitals and the attitudes of adults in the US towards post-operative pain management also showed that just 43% of US hospitals had acute pain management programmes.⁵ The survey conducted by Goucke and Owen in Australia in 1995 again revealed that only 33% of hospitals in Australia had a formal APS but a further 53% of those hospitals that do not have an APS would like to develop one.⁷

Table 4. Staffing levels and caseload of acute pain services and part-time pain services

Staffing levels	No. of hospitals (%)
1.5 full-time senior staff	1 (9)
1 full-time senior staff	1 (9)
1 part-time senior staff	4 (36.5)
1 full-time junior staff	0 (0)
1 part-time junior staff	3 (27.5)
Nil	2 (18)

No. of cases per year	No. of hospitals (%)
> 800	3 (27.3)
500-800	3 (27.3)
300-500	2 (18.2)
< 300	3 (27.3)

Although half of the responding hospitals in our survey had APS, the dedicated staffing for APS is very low, with just 4.5 full-time equivalent senior and 1.5 full-time equivalent junior anaesthetic staff involved in acute pain management in all of the hospitals studied. It is also disappointing to learn that only one of the 14 hospitals had 0.5 nurse specialists to help with such an important service. The average number of PCA pumps (8.8) and syringe pumps (7) was too few in number, considering that the average caseload of APS/CS per responding hospital is around 500 per year. It is encouraging to find that 90% of those hospitals with APS had protocols for running their APS.

Table 5. Methods of delivering post-operative analgesia

Cases receiving EI*(%)	No. of hospitals (%)
30-50	1 (9)
10-30	2 (18)
10	5 (46)
<10	3 (27)
Cases receiving PCA†(%)	
>80	1 (9)
50-80	4 (36.4)
30-50	0 (0)
10-30	4 (36.4)
<10	2 (18.2)

* EI epidural infusions
† PCA patient-controlled analgesia

However, the lack of auditing and CQI activities is probably related to the manpower shortage.

Despite increased awareness of the need for acute pain management among professionals and the need for establishment of APS, the reasons for not improv-

ing APS in the individual hospitals are mainly related to a lack of resources. Of the responding hospitals, 93% stated that APS in Hong Kong should be further developed and apart from injecting more resources (71%) and increasing training in the area of pain management (71%), the need to develop awareness among medical and nursing staff (91%) and patients (57%) were also considered important areas that should be explored.

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