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Contents

Pages
3 Editorial

Featured Articles

4 Anesthesia in Taiwan - Past, Present and Future

Clinical Investigations

9 A Prospective Evaluation of a Microcoagulation Analyzer
13 An Audit of Day Cases at a Major District Hospital

Pain Medicine

19 Phantom Limb Pain and Phantom Sensation: A Pilot Survey

Case Report

25 A Rhesus Negative Patient with Massive Transfusion

College Business

32 Council Highlights
33 Honorary Treasurer's and Auditors' Reports
41 Hospital Accreditation 2005
42 Board of Education
43 Board of Examination
44 Board of Pain medicine
45 Board of Censor
46 CME/CPD Returns using the *MLMS*
47 CME Programme (revised in August 2004)

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Editorial

This issue of the HKCA Bulletin marks a new chapter in the history of the Hong Kong College of Anaesthesiologists. It was thirteen years ago that Professor Chandra Rodrigo started the first issue of the College Newsletter. It works well as an important tool for communication between the College and our fellow members. We believe we can do more than a newsletter. In February, the Council resolved to "upgrade" and "rename" the newsletter to the *HKCA Bulletin* (香港麻醉科醫學院期刊). The Bulletin will serve two purposes. Apart from the traditional College business, about half of the bulletin will be devoted to scientific materials that have relevance to our specialties (Anesthesia, Pain and Intensive Care Medicine) in Hong Kong. The *HKCA Bulletin* will be a quarterly publication. All scientific papers in the *Bulletin* will be reviewed by members in the editorial board and the formal project committee. If you have finished an original investigation, conducted an audit, written a review, or you have come across an interesting case or photograph, please consider the *HKCA Bulletin*. I can assure you that it will have major impact on our specialty. I wish to remind you that papers accepted in the *HKCA Bulletin* will also be considered as "published articles" for the purpose of formal project requirement. We are also in the process of applying CME recognition from the Board of Education.

As an inaugural issue of the *HKCA Bulletin*, we are proud to bring you an important article from Taiwan. Drs Tsou and Wong have outlined the various aspects of anesthetic practice over there. Again the scientific articles inside this issue have been peer-reviewed and we hope we can all learn something out of them.

Finally, I wish to draw your attention to a couple of important meetings. The Annual General Meeting will be held on 28 June 2005 (details will be announced in due course) and the Combined Scientific Meeting on 27-28 August, 2005.

Matthew Chan
Editor-in-Chief

Instruction to Contributors

We welcome contributions from invited guests and members / fellows of the Hong Kong College of Anaesthesiologists. Articles should be prepared with suitable word processing software. Figures, table, pictures and photo-micrographs should be saved in the same file. The file could be sent either by e-mail or by post (on a floppy disc or CD) to the Editor. Please indicate if the material has to be returned after the editorial processing. The accuracy of the materials published is the responsibility of the contributors. The contributors must ensure that the materials submitted do not infringe copyright. The editorial board reserves the editorial right for selection of publication.

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Unless specifically stated otherwise, the opinions expressed in this newsletter are those of the author's personal observations and do not necessarily reflect the official policies of the Hong Kong College of Anaesthesiologists.

Featured article

Anesthesia in Taiwan — Past, Present and Future

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In Taiwan as in many other countries the provision of anesthesia and other related services like pain management and intensive care is almost exclusively physician based. Among the clinical disciplines, anesthesiology has been identified as one which has major manpower problems. Some of the factors contributing to this are the rapid growth of surgical specialties as well as surgeons, the increase in number of hospitals both public and private and the rather limited number of training posts for anesthesiologists. The involvement of anesthesiologists in the provision of other services such as intensive care, pain management and resuscitation and the enormous demand for these services have in turn further enhanced the shortage. In this article, we plan to touch upon the areas of the growth of the specialty, anesthesia education, anesthesia in leadership role in case of medical crisis, i.e. SARS, anesthesia in community standing that include quality of general and community patients as well as general public understanding of anesthesia. Finally, the worldwide challenge of medical economics on the future of anesthesia in Taiwan will be discussed.

(1) *Growth of anesthesia as a specialty in Taiwan*

The first section of anesthesia was founded under the department of surgery at the Tri-service General Hospital, Taipei in 1952 and anesthesia was first recognized as an independent section from the surgical department at Taiwan University Hospital, Taipei in 1956. Taiwan Society of Anesthesiologists (TSA) (Former name was the Society of Anesthesiologists of Republic of China; SAROC) was established in 1956 and became a member of the World Federation of Anesthesiologists (WFA) in 1964. The first seven anesthesiologists were certified in 1971. However, it was not until 1988 that a formal Taiwan Board of Anesthesiologists was established. During the early stages, most anesthesia practices were performed by nurse anesthetists who were supervised by a few anesthesiologists. Anesthesia was not a very popular choice for medical students until 1987 when Professor Tak-Yu Lee, the past Chairman of Department of Anesthesiology, Taipei Veterans General Hospital first made a decision that all anesthesia practices must be conducted by anesthesiologists and that the nurse anesthetists could only play a supportive role as ICU nurses. Although the number of anesthesiologists increased from less than 200 (1990) to 700 (2004) in the past 15 years, the present anesthesia case load per anesthesiologist per year in Taiwan is still twice or thrice higher than those in Japan, USA or other developed countries.

Some Health Statistics and Indicators of Taiwan

The current population of Taiwan is around 22.5 millions with more than 70% residing in West Taiwan. A growing number of them are urbanized and the growth rate of the population is 1.24%/year. The average life expectancy is 73 years for the male and 79 years for the female. The birth rate was 0.9%/year in 2004. The current doctor population ratio is 1:1,100.

The health care service in Taiwan is one of the most comprehensive among developing countries with high accessibility and coverage for all income groups. It is provided by the government with coverage of 99% of Taiwan citizens at an affordable premium. The public health sector is by far the largest provider accounting for 573 hospitals with 121,698 beds. According to the Bureau of National Health Insurance (BNHI) of Taiwan,

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in 2001, Taiwan's total health expenditures accounted for 5.7% of GDP, which is comparatively lower when measured against the figures in most of the Convention on the Organization for Economic Co-operation and Development (OECD) countries.

In 2000, per capita health expenditures totaled US$ 1,275/year in Taiwan, whereas that of the United States was 3.6 times higher and that of the OECD countries was 1.7 times higher than the per capita expenditures in Taiwan. The public sector allocation for health care is approximately $516 per person per year in the year 2004. This low health care fund with comprehensive patient coverage created a financial crisis for BNHI with its ever enlarging deficit. Taiwan was once the number one ranking health care systems among all countries in the world, but it will self destruct unless insurance premiums of patients are increased by legislative actions to off set the ever enlarging deficit.

Anesthesia Care Providers in Taiwan

There were a total of 20,453 doctors in Taiwan in 2003. According to the statistical data gathered by Taiwan Society of Anesthesiologists (TSA), there were 559 anesthesiologists in Taiwan in 2002. The population of Taiwan was approximately 22.5 millions, and thus the ratio of population per anesthesiologist was 40,288:1. The geographical distribution of the anesthesiologists was very uneven. Nearly half of them (46%) were in the northern region.

The data shows that in the year of 2002, 559 anesthesiologists had performed 793,057 anesthesia cases. The average number of cases performed by each anesthesiologist per year was approximately 1,419 cases. This average number of cases was barely below the limit of 1,500 cases per year suggested by the National Health Administration of R.O.C. This overwork situation greatly affected the quality of anesthesia and the training of anesthesiology residents.

In recent years, the number of medical graduates who chose anesthesia as a specialty has decreased. The recruitment rate of first year anesthesiology residents at 20 medical and sub-medical centers in Taiwan in the years of 2003 and 2004 reached only half of full training capacity. The number of residents entered the Department of Anesthesiology in Taipei Veterans General Hospital (TVGH, the biggest public hospital) in 2003 and 2004 was 6 and 6 respectively. This represents the capacity of TVGH.

However, the newest data has indicated an increase of 71 residents in anesthesiologists in Taiwan from 2002 to 2003, according to TSA. Among them, 86% were male; 70% were within the age gap between 36 and 50; 39% served in medical centers and 47% practiced in regional or district hospitals.

Judging from above, the professional respect for anesthesiology awaits wider recognition from both the National Health Administration authority and general public. Because of the discouraging and unreasonable payment policy promulgated by the Bureau of National Health Insurance, less job opportunities have been provided by some hospitals (especially the major medical centers) for well-trained anesthesiologists in Taiwan. The consequences may lead to persistent difficulty in recruiting newcomers to join the field of anesthesia and the possibility for senior anesthesiologists in shifting into other medical fields.

(3) *Roles of anesthesiologists in Taiwan*

Anesthesia practice at operating room

Anesthesiologists in Taiwan presently play an important role in the operating room for anesthetic needs. All general anesthesia practices must be performed by anesthesiologists. And officially, nurse anesthetists are only allowed to perform spinal anesthesia under the supervision of surgeons in some rural areas where no anesthesiologists are available. In general, most anesthesiologists have credibility in medical centers as well as those in private local hospitals. Some anesthesiologists are full-time clinicians in certain medical centers and consequently have much less time to do the basic research in the laboratory. The status of a medical school is based upon its scholarly achievements. However, scholarly activity is non-revenue producing. Therefore, the administrative authority of a medical school must provide appropriate non-clinical time for research.

Pain management

Chinese Association for the Study of Pain (CASP) was founded in 1989 and pain management has become a sub-specialty of anesthesia in Taiwan. Taiwan, ROC was also an initiating member of International Association of Study of Pain (IASP) in 1974. There are about 1,500 members in CASP, of them only about 500 are anesthesiologists. Most anesthesiologists actively participate in the acute pain management program. PCA and painless endoscopy have been conducted widely in recent 5 years and many SCI papers have been published in this field. Unfortunately, few anesthesiologists would choose the chronic pain sub-

specialty as a full-time job due to low payment of clinical practices.

It is obvious from the observations of a foreign physician (co-author) that comprehensive health care for all eligible Taiwan citizens can not be sustained with continued deficit spending from the government. Either the patient needs to pay more health insurance premium, or to assume a larger deductable (out of patient payment) per visit/treatment. It appears that this is such an unpopular legislative problem, the government rather pass the responsibility to the hospitals than implement an increase in health insurance premium. It would be a pity to see the health care system in Taiwan reaches a resuscitative stage, which will be a much more difficulty situation than to provide prophylactic measures now.

Intensive Care

Society of Emergency and Critical Care Medicine, Taiwan, ROC was founded in 1982. Anesthesiologists have not been deeply involved in critical care in Surgical ICU in Taiwan until 1991 when Professor Gau Jun Tang completed his clinical fellowship of SICU from Johns Hopkins Hospital. Intensive care then became another sub-specialty of anesthesia. Anesthesia residents started rotating to SICU and several years later, Dr G.J. Tang became the first full-time anesthesiologist who was in charge of SICU in Taiwan. Today, many of the anesthesiologists in Taiwan are also certified by the Board of Critical Care Medicine. Nevertheless, presently almost no anesthesiologist can work at SICU as a full-time doctor because of the inadequate pay. However, the quality of care has been greatly improved through anesthesiologists' efforts.

A special emergency, SARS

How about the SARS epidemics in Taiwan?

According to the newest SARS definition of World Health Organization (WHO), Center of Disease Control (CDC) of Taiwan reclassified the cases by the results of polymerase chain reaction (PCR) and serological testing in order to verify the prevalence of SARS in Taiwan during the period of March to June 2003.[1]

By 31 July 2003, there were 3,032 SARS reported cases. Of them, 668 were probable cases, 1,320 suspected cases and 1,044 cases excluded. Among the 668 probable cases, 520 (77.8%) were in the north region of Taiwan and 109 (16.3%) were in the south region. The age distribution of SARS cases is 434 cases (65.0%) in the 20-59 age group and 192 cases (28.7%) in the age group of 60 and above. Seventy-two probable cases died of SARS. 49 cases (68.1%) of them occurred in the north region, and 20 cases (27.8%) in the south region. The overall fatality rate was 10.8% and most of the deaths were elderly. The fatality rate for people of aged 60 and above was 20.8%.[1]

What is Anesthesiologist's role of Anti-SARS in Taiwan?

The anesthesiologist, who is also functioning as an intensivist in Taiwan, has to shoulder a unique responsibility in treating SARS because they are more familiar with the special modes of mechanical ventilation that can be used to manage patients with ARDS. Sometimes mechanical ventilation also requires sedating the patients into a drug-induced coma so that they are not too anxious as to "fight" the ventilator. On May 1, 2003, we first established an intubation team composed of senior anesthesiologists for SARS patients at Taipei Veterans General Hospital and other medical centers followed our steps later. We anesthesiologists also devoted ourselves to the critical care of the patients in SARS ICU. With an appropriate guideline established for caring the SARS patients, Taipei Veterans General Hospital anesthesiologists have intubated sixty-seven of probable or suspected SARS cases. Fortunately, there was no anesthesiologist inflicted with SARS during this period.

In conclusion, SARS is a highly infectious disease with severe clinical sequelae. It puts enormous burden on the health care system worldwide. While early recognition and prompt isolation are important basic measures, further research on the development of effective treatment regimens, preventive measures and vaccines are vital to combat this viral illness. Anesthesiologists as well as other health related personnel in Taiwan who have devoted themselves to the fight against SARS are the heroes in this battle.

(4) *Taiwan Journal of Anesthesia - Acta Anaesthesiologica Taiwanica*

Acta Anaesthesiologica Sinica (AAS), the official journal of SAROC, has been firstly published in 1961, renamed as Acta Anaesthesiologica Taiwanica (AAT) in 2004. During Professor Tak-Yu Lee's 8-year office as chief editor, AAT had been 6 times accredited as one of the excellent scientific journals by National Science Council (NSC). Besides these six accreditations, AAT also earned financial supports from NSC for four times. In 2002, there were in Taiwan more than 20 official journals published by various clinical specialty societies,

of which only two (TSA and Taiwan Society of Pediatrics) were accredited by NSC as excellent journals but only AAT was given financial support. It ranked fifth next to four top Taiwan's Science Citation Index (SCI) journals. During the last 8 years, 15% of manuscripts on an average received by AAT came from foreign countries, including USA, Australia, Japan, Korea, Singapore, Hong-Kong China, China, Iran, Turkey and Sweden. The number of AAT papers cited by SCI journals in 2002 was 79. The number of manuscripts received by AAT was increased from 54 in 1995 to 67 in 2002, but it is still in want of manuscripts. Because the budget from TSA is limited, it only allows hiring of one part-time secretary to take care of the clerical work and much of remaining chores were shared by Professor Lee and associated chief-editors (local outstanding professors in anesthesiology). In spite of the limited budget and personnel, Professor Lee and his associates still devoted their every effort to improving the quality of AAT. With his contribution, AAT won many awards and gained status from the Taiwan academic community.[2,3]

(5) *The Contemporary Undergraduate Education of Anesthesia in Taiwan*

In 1901, Buxton first proposed that study of anesthesia should be a compulsory subject in medical curriculum for junior surgical members in their training program.[4,5] It was not until 1912 that the General Medical Council (U.K.) included anesthesia in medical training. Anesthesia developed as a specialty in 1947, but unfortunately the subject was removed from medical curriculum and it was not until 1980 that it was reinstated.[6] In 1982 a study remarked that there were less than 50% of newly qualified physicians who could manage an unconscious patient and only 8% could perform CPR.[7] As recent as 1994, Gould et al. remarked that most house staffs had limited knowledge about analgesic drugs and in handling the perioperative complications such as hypotension.[8] All these have shown that the quality of undergraduate anesthetic training has been variable and often wanting. Professor PK Lee of National Taiwan University Hospital first presented the status of education of anesthesia in Taiwan which was published in Anesthesia and Analgesia in 1969.[9] It was the first official international publication concerning the education of anesthesia in Taiwan. Up to the present, there are no other descriptive data that analyze the ongoing undergraduate anesthesia program in Taiwan. On August 23, 2003, a symposium on medical education of anesthesia was jointly sponsored by the Society of Anesthesiologists of Taiwan and Mackay Memorial Hospital in Taipei. Three dimensions of the education of anesthesia, namely, undergraduate, residency and


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Figure 1. A recent issue of the *Acta Anaesthesiologica Taiwanica*

postgraduate training courses were hotly discussed. In order to attract the best medical students to choose anesthesiology as a career, it is of prime importance to center our attention on how to improve both the quantity and quality of undergraduate medical education in anesthesiology, which is the foundation of future anesthesia in Taiwan.

As a part of perioperative medicine, in all ten Taiwan medical schools now, anesthesiology has its curriculum divided in three parts and taught in three phases namely, studentship, clerkship and internship in the undergraduate program. Lectures in the required course for the fourth- or fifth-year medical students are conducted pursuant to the guidelines published by the Society for Education in Anesthesiology (SEA) in 1995 with emphases on:

(1) preoperative patient preparation
(2) airway management
(3) management of fluid, electrolyte and acid-base balance of the critical patients
(4) pharmacology and toxicology of local, intravenous and inhalational anesthetics
(5) introduction to anesthetic subspecialties, and
(6) acute and chronic pain management.[10]

Clerkship of one to three weeks in anesthesia is essentially required in most medical schools in Taiwan except three (7/10), whereas internship from two to six

weeks in anesthesia is all elective without exception. Although the lectures are generally similar among schools, the content, connotation and execution of the clerk- and internship in different medical schools are relatively diversified.

Recently the number of medical students applying for residencies in anesthesiology has significantly dwindled in Taiwan, probably due to reduction of practice opportunities and current trend of pursuance of a low-risk subspecialty with high-income. We try to encourage medical students to consider anesthesiology as a career by providing them an actual and positive learning experience during their turn in anesthesiology in their clerkship. Recognizing the importance for this period, we have raised their interest in anesthesiology by problem-based learning (PBL) and the e-learning (PBeL) as well through the teaching web site at the VGH department of anesthesiology. Through the problem-based and active learning involving clinical cases, our newly designed program has generated enthusiastic interest among the medical students. With our continuing efforts in improving anesthesiology teaching curriculum, the number of students from several medical school entering anesthesiology as their choice of career has been steadily increased for the past three years. Watts et al. indicated that a positive role model is essential to influence medical student career choice in anesthesia and that was true in our experience.[11] It is absolutely necessary for us to improve the quality of education and to educate tutors in the medical schools so as to attract the best medical students to dedicate themselves to the specialty of anesthesiology.

(6) *Strategies for the future of anesthesia in Taiwan*

Although anesthesia in Taiwan has made significant improvement by the great efforts of many of the pioneers in the past decades, there are still much to be done to further improve the specialty. These include:

(1) Increasing the number of qualified medical student graduates into anesthesia
(2) Increasing the quality of general and community (patients as well as general public) understanding of anesthesia.
(3) Enforcing standards of care particular in small private local hospitals.
(4) Increasing the involvement of anesthesiologists in providing other services such as pain management both acute and chronic, obstetric analgesia, and intensive care. This will enhance the image and status of anesthesiologist as a valuable member of the medical team and encourage many doctors to enter the specialty.
(5) Establishing formal training courses for nurses and paramedical staff as anesthetic assistants so that they can help the anesthesiologists in a range of clinical tasks.
(6) Increasing the payment of anesthesia practice.

The mission of anesthesia in Taiwan is not only to provide safe and effective anesthesia for patients but to become a truly perioperative physician.

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Clinical Investigations

A Prospective Evaluation of a Microcoagulation Analyzer

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Background: **Massive hemorrhage and transfusion is often complicated by impaired coagulation. A reliable point-of-care coagulation test facilitates the appropriate use of blood products. We prospectively studied a microcoagulation analyzer, the Hemochron Jr. (International Technidyne, Edison, NJ) in patients with major intraoperative blood loss.**

Method: **We studied 40 patients with intraoperative blood loss greater than 1,000 ml. Blood samples were collected from a peripheral vein or an indwelling arterial or central venous catheter. The prothrombin time (PT) and activated partial thromboplastin time (APTT), measured by the Hemochron Jr. were compared with laboratory results using the Bland and Altman analysis.**

Results: **Median intraoperative blood loss was 2,500 ml (range 1,000 - 11,000 ml). The mean bias and 95% limits of agreement for PT and APTT were 0.3 (- 5.3 to 5.9) s and 0.9 (-19.3 to 21.1) s, respectively.**

Conclusion: **Although the mean bias between the Hemochron Jr. and laboratory measurements was close to zero, the limits of agreement were too wide for it to be clinically acceptable. The Hemochron Jr. microcoagulation analyzer cannot be used interchangeably with hospital laboratory tests.**

Keywords: *Surgery, Hemorrhage, Prothrombin time, International normalized ratio, Activated partial thromboplastin time, Point-of-care.*

The Hemochron Jr. (International Technidyne, Edison, NJ) is a microcoagulation analyzer capable of performing bedside activated partial thromboplastin time (APTT), prothrombin time (PT) and international normalised ratio (INR). This device measures whole blood clotting times. It extrapolates and displays plasma clotting times based on a validated whole blood *versus* plasma comparative study.[1] The process of clot detection is entirely automatic. Results are available within minutes. The device is portable, simple and operator-*in*dependent. Due to the small blood sample required, repeated testing is feasible even in pediatric patients or neonates.

It is not known whether the Hemochron Jr. can be used to monitor coagulation status in surgical patients with massive intraoperative blood loss and transfusion. Therefore we have validated the Hemochron Jr. as a point-of-care coagulation monitor in this clinical scenario. We compared the Hemochron Jr. PT, INR and APTT with standard hospital laboratory tests.

Materials and Methods

This study was approved by the Clinical Research Ethics Committee of the Chinese University of Hong Kong. Written informed consents were obtained from adult surgical patients undergoing operations with anticipated major intraoperative blood loss. Inclusion criterion for the study was a documented intraoperative blood loss greater than 1,000 ml. About 5 ml of blood was collected intraoperatively from each subject from an indwelling central venous or arterial catheter or from venepuncture. Blood samples were immediately sent to hospital laboratory for measurements of PT, INR and APTT, and the corresponding clotting times from the same sample were measured using the Hemochron Jr. Intraoperatively, fluid therapy, blood and blood product transfusion and anesthetic management was decided by the attending anesthetist.

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Table 1. List of operations performed with documented blood loss greater than 1,000 ml.

General surgical	Number of patients
Pelvic exenteration	1
Liver resection	8
Gastrectomy for bleeding ulcer	1
Sigmoid colectomy, total cystectomy and distal pancreatectomy	1
Whipple's operation	4
Anterior resection and bladder reconstruction	1
Pharyngo-laryngo-esophagectomy	1
Bowel resection for leaking anastomosis	1
Plication of gastro-esophageal junction for gastrointestinal bleeding	1
Abdominal perineal resection	1
Pancreatico-jejunostomy	1
Laparotomy for lavage	1
Orthopedics	
Right hip disarticulation	1
Right hemipelvectomy	2
Posterior spinal fusion	3
Open reduction for fractured acetabulum	1
Resection of sacral chondroma	1
Urological	
Radical cystectomy and construction of ileal conduit	1
Radical prostatectomy	1
Gynecological	
Debulking of ovarian tumor	4
Vascular	
Repair of infrarenal abdominal aortic aneurysm	3
Cardiac	
Hemostasis post aortic valve replacement	1

Our hospital laboratory used ACL Futura to perform both PT and APTT. Analysis was based on turbidimetric clot detection. For PT, Thromborel S (Behring, Germany) was used as the clotting agent and the results were also expressed in INR. Extended mode was used and the time limit of detection was 9-120 seconds. For APTT, automated APTT (Organon Teknika, USA) was used. The time limit of detection was 15-240 s. Commercial control samples were run daily for every 20 consecutive patient samples as quality control procedures. The within-samples and day-to-day coefficients of variation were below 3% and 5%.

The Hemochron Jr. consisted of a microprocessor-based analyzer and individual test cartridges for PT and APTT. This device utilized mechanical and optical technique for clot detection. A small volume of blood (0.005 ml) would be withdrawn automatically by a pump from a 0.015 ml sample well into the reaction chamber of the test cartridge. The blood was then mixed with reagents in the reaction chamber. The speed at which the blood sample moved back and forth between the two LED optical detectors was observed. As a fibrin clot formed in the reaction path, the blood movement declined. The Hemochron Jr. recognized that the clot endpoint had been achieved when the blood movement decreased below a predetermined rate. The actual clotting time was then extrapolated by using a predetermined validated conversion formula to report the equivalent of a conventional plasma clotting time. The device was calibrated before use, using standard cartridges provided by the manufacturer.

The paired coagulation test results from each sample were analyzed for statistical agreement using the Bland and Altman's analysis.[2] Sample size calculation was based on the assumption that an observed difference of 10% of the actual value would be clinically unacceptable, and it was estimated that 40 paired samples would be required to prevent overlapping of the 95% confidence intervals of the limits of agreement.

Results

Sixty-eight adult surgical patients consented for the study. Twenty-eight of them were subsequently excluded because the intraoperative blood loss was less than 1,000 ml. One blood sample was obtained from each of the remaining subjects, giving a total of 40 paired coagulation test results for analysis.

The type of operations performed is shown in Table 1. At the time of blood sampling, the median blood loss was 2,500 ml (range 1,000 - 11,000 ml). The median volume of intravenous fluid infused was 5,000 ml (range 1,000 - 10,500 ml). A variable number of blood and blood products were transfused in each case depending on the nature of the surgery and the patient's underlying medical conditions.

The Bland and Altman's plots for PT, INR and APTT are shown in Figures 1-3. For PT, the mean bias was 0.3 s and the 95% limits of agreement were -5.3 to +5.9 s. The 95% confidence intervals of the mean bias and the limits of agreement were 0.3 ± 0.88 s, -5.3 ± 1.53 sec and 5.9 ± 1.53 s, respectively. For INR, the mean bias was 0.07 and the 95% limits of agreement were -0.35 to +0.49. The 95% confidence intervals of the mean bias

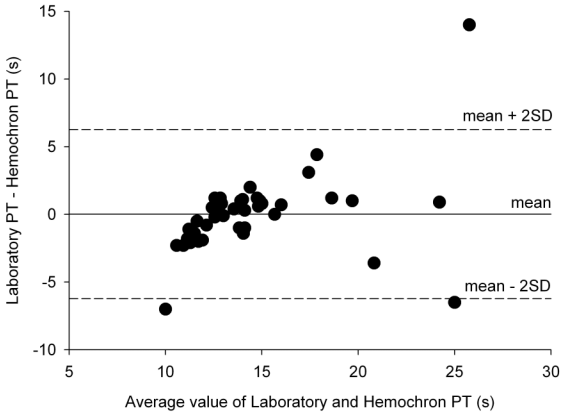

Figure 1. Bland and Altman's plot of the difference in prothrombin time (PT) between Laboratory and Hemochron Jr values *versus* their mean. Solid line indicates mean difference and dashed lines indicate to the limits of agreement.

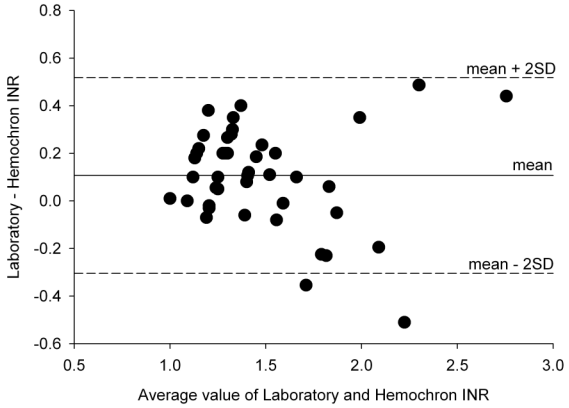

Figure 2. Bland and Altman's plot of the difference in international normalized ratio (INR), between Laboratory and Hemochron Jr values *versus* their mean. Solid line indicates mean difference and dashed lines indicate to the limits of agreement.

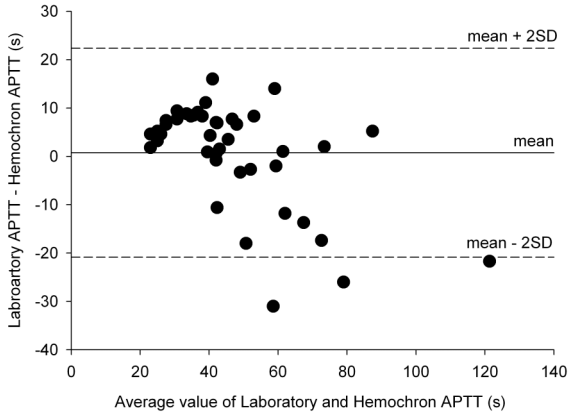

Figure 3. Bland and Altman's plot of the difference in activated partial thromboplastin time (APTT), between Laboratory and Hemochron Jr values *versus* their mean. Solid line indicates mean difference and dashed lines indicate to the limits of agreement.

and the limits of agreement were 0.07 ± 0.07 s, -0.35 ± 0.11 s and 0.49 ± 0.11 s, respectively. For APTT, the mean bias was 0.94 s and the 95% limits of agreement were -19.3 to 21.1 s. The 95% confidence intervals of the mean bias and the limits of agreement were 0.94 ± 3.19 sec, -19.3 ± 5.54 s and 21.1 ± 5.54 s respectively.

Discussion

The Hemochron Jr. is potentially useful in clinical scenarios where rapid diagnosis and treatment of coagulopathy may be life saving. Impaired coagulation associated with massive blood loss and transfusion is one example. Dilution of endogenous clotting factors by intravenous fluid, depletion of clotting factors in homologous blood, disseminated intravascular coagulation and fibrinolysis all contributes to the development of clinical coagulopathy.[3] Because of increasing concern about the risk of disease transmission, empirical use of blood products such as fresh frozen plasma for the treatment of coagulopathy is not recommended.[4] Coagulation test results from the hospital laboratory, while being the gold standard, are often significantly delayed when they are most urgently required. Furthermore, it has limited role in guiding blood component therapy in the extremely dynamic environment in the operating theatre. A reliable point-of-care coagulation monitor therefore would significantly improve safety and cost effectiveness of blood component therapy.

In a previous study,[5] monitoring of Hemochron Jr. APTT has been evaluated in patients undergoing elective procedures for coronary intervention requiring heparin therapy. The Hemochron Jr. APTT showed good correlation with laboratory APTT (r = 0.79, $P < 0.001$) but the mean Hemochron Jr. APTT was 39% larger than the laboratory APTT. In that study, however, the Bland and Altman's analysis was not performed. We believe the analysis is incomplete, as there is no assessment on agreement between two measurements.

The present study shows that for PT, INR and APTT, the overall bias between the Hemochron Jr. and the hospital laboratory, which was represented by the mean difference, was small. However, the variability of individual results, which was represented by the limits of agreement, was too wide for it to be clinically acceptable. Thus, the laboratory PT might be 5.9 s larger to 5.3 s smaller than the Hemochron Jr. PT in 95% of subjects. The degree of variability was similar for INR and even larger for APTT. Therefore, the decision to transfuse blood products cannot be based on an individual result from the Hemochron Jr.

In a preliminary study, we have also attempted to evaluate the Hemochron Jr. as a trend monitor for coagulation status. Serial blood samples were taken from individual patients with massive intraoperative blood loss and transfusion. Trend analysis for consecutive samples was performed using the Bland and Altman's analysis and the results showed that the percentage change in Hemochron Jr. clotting times showed poor statistical agreement with the percentage change in laboratory clotting times. These data imply that the Hemochron Jr. is not useful as a trend monitor either.

In conclusion, the results from the Hemochron Jr. cannot be used interchangeably with that of the hospital laboratory. The Hemochron Jr. cannot be recommended as a point-of-care coagulation monitor in surgical patients during massive blood loss and transfusion.

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An Audit of Day Cases at a Major District Hospital

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Introduction: **We audited the outcomes of a Day Surgery Centre (DSC).**

Methods: **All patients attending the DSC requiring anesthetic care during an 18-month period from 1 July 1999 to 31 December 2000 were included. Data were obtained for 2,285 cases by chart review. American Society of Anesthesiologists (ASA) physical status was used as the criterion to screen out patients who did not need anesthetist assessment prior to the day of surgery. The accuracy of nurse screening was estimated by the matching of nurse and anesthetist assigned ASA physical status. Recovery times, incidences of complications and readmission were recorded.**

Results: **Most patients were healthy (ASA I 60.3%, ASA II 35.5% and ASA III 1.4%). 1,958 cases had both nurse assigned and anesthetist assigned ASA. Grading concurred with each other in 80.6% of cases. There was only one cancellation due to medical reason on the day of operation in the cases approved by nurses. The overall cancellation rate was 6.1%. Majority were due to surgical reasons (47.5%) and minor illnesses (37.4%). The incidence of postoperative pain requiring treatment at DSC was 5.7%. Fifty-five (2.6%) patients had postoperative nausea and vomiting requiring pharmacological treatment. The mean duration of postoperative stay at DSC was 254 minutes. The unanticipated admission rate was 4.4%, about half of which were due to surgical reasons. 2.3% of cases were readmitted to the same hospital within 28 days of surgery, most of them (69.4%) were due to surgical reasons.**

Conclusion: We identified the areas for deficiency in ambulatory surgery service with this exercise.

Keywords: *Day Surgery, Anesthesia, Complications, Recovery.*

United Christian Hospital is a 1,200 bed acute care hospital in Kwun Tong District of Hong Kong. Approximately 25% of all elective procedures requiring anesthetic care are done on a day surgery basis. The Day Surgery Centre (DSC) was established in 1995. It comprises a reception area, a waiting area, a play area for children, a dedicated two-stage recovery room, and an "Anesthetic Preoperative Assessment Clinic". The facility is located adjacent to the main operating room. Operating room facilities are shared with *in*patients. There are both dedicated and shared operating lists.

Prior to August 2000, all patients booked for day surgery were first screened by trained DSC nurses. Based on the results of a health questionnaire, blood pressure, pulse rate, body weight, height and routine urinalysis, an American Society of Anesthesiologists (ASA) physical status class was then assigned for each patient. Patients assigned ASA I by nurses were "approved" for day surgery. They would only be assessed on the morning of surgery by list anesthetists. Those who were assigned ASA II or above were referred to the Anesthetic Clinic for preoperative assessment two weeks before the day of surgery. Our process changed in August 2000 so that all patients are now seen by anesthetists directly after surgery booking, and no nurse assigned ASA is given.

An audit was carried out to collect data on day surgery cases. We aimed to identify areas for service improvement. We focused on caseload, cancellations and outcomes including complications at DSC, time to discharge, unanticipated overnight admissions and readmissions. Anesthetist and nurse assigned ASA physical status were compared to indicate the accuracy of case screening by nurses prior to referral to

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anesthetic assessment.

Methods

All DSC cases requiring anesthetic care (general anesthesia, regional anesthesia, monitored anesthetic care) during an 18 month period from 1 July 1999 to 31 December 2000 were included. Cases not involving anesthetists (local anesthesia, no anesthesia) were excluded.

For each case, record from the nurse assessment, pre-anesthetic assessment, anesthetic and recovery room were reviewed by the investigators within 2 days of surgery. The data were recorded on a standardized case report form and later entered into a computer database. The data recorded include patient's age, gender, surgical specialty, anesthetist assigned ASA status, nurse assigned ASA status (for cases presenting to the DSC before August 2000), day-of-surgery cancellation and reason, type of anesthesia, complication in DSC, duration of postoperative stay at DSC, cause of delayed discharge (>4 hours postoperatively), postoperative analgesia (defined as drugs given in operating room intended to prevent postoperative pain), prophylactic or rescue antiemetic use and reason for unanticipated overnight admission. Pain as a complication was defined as pain requiring the administration of analgesics postoperatively at DSC. Postoperative nausea and vomiting (PONV) was defined as postoperative nausea and vomiting requiring the administration of antiemetics at DSC.

The medical records of all patients who were discharged home but readmitted to the same hospital within 28 days of surgery were automatically sent to us by the hospital medical records office. These records were reviewed and the reasons for readmission were entered into the database.

Results

Patient characteristics and caseload

Data were obtained for 2,285 cases. The mean age of patients was 31 years (range 7 months to 95 years). 53.7% were male and 46.3% were female. Patient and surgical details is shown in Table 1.

ASA status

Anesthetist assigned ASA status was recorded in 2,215

Table 1. Caseload and patient age according to surgical subspecialty

	Number	Percentage of all DSC cases	Mean age (years)	Age range (years)
General surgery	495	21.7	44.0	15-38
Orthopedic surgery	388	17.0	37.8	0.9-76
Gynecology	224	9.8	39.3	15-73
ENT	47	2.1	20.7	1-59
Dental	246	10.8	21.7	3-79
Ophthalmology	205	9.0	64.9	1-95
Pediatric surgery	659	28.8	6.5	0.6-18
Anesthetic (pain procedures)	21	0.9	51.0	23-8 1
Total	2,285	100	30.7	0.6-95

Table 2. Anesthetist assigned ASA physical status of all Day Surgery Center (DSC) cases.

ASA status	Number	Percentage of all DSC cases
ASA I	1,371	60.0
ASAII	812	35.5
ASA III	32	1.4
ASA status omitted	70	3.1
Total	2,285	100

Table 3. A comparison of anesthetist and nurse assigned American Society of Anesthesiologists (ASA) physical status class. †Patients in whom anesthetist and nurse assigned ASA status match. Total = 45.8 + 33.7 + 1.1 = 80.6%

	Nurse ASA I	Nurse ≥ ASA II	Total
Anaesthetist ASA I	†896 (45.8%)	320 (16.3%)	1,216 (62.1%)
Anaesthetist ASA II	62 (3.2%)	†659 (33.7%)	721 (38.4%)
Anaesthetist ASA III	0(0%)	†21 (1.1%)	21(1.1%)
Total	958 (49%)	1,000 (51%)	1,958 (100%)

cases (Table 2). Most patients were of ASA groups I and II: ASA I: 1,371 patients (60%); ASA II: 812 patients (35.5%). Thirty-two patients (1.4%) belonged to ASA III, most (18/32) of them had cataract surgery under monitored anesthetic care (MAC). No patient was classified as ASA IV. The ASA status of 70 patients (3.1%) were omitted on the anesthetic records.

Accuracy of case screening by nurses

Patients presenting to the DSC before August, 2000 (1,958 cases) had both nurse and anesthetist assigned ASA status. They were the same in 80.6% of cases (Table 3). Fifty-one percent of cases were assigned ASA II or above and referred to Anesthetic Clinic. Forty-nine percent of cases were assigned ASA I by nurses and were therefore not seen by anesthetist before the operation day.

Cancellations

The overall cancellation rate was 6.1%. The reasons for cancellations are shown in Table 4. The major causes of cancellations were surgical (47.5%) and minor illness (37.4%). The main surgical reason was that there was no longer a need for operation. Upper respiratory tract infection accounted for most of the cancellations in the "minor illness" category. Six cases were cancelled for "other" reasons which included patient refusal and one case of failed intubation in a patient scheduled for laparoscopic sterilization.

Medical problems accounted for 4.3% (6 cases) of cancellations. One of them was not assessed by anesthetist prior to operation day because of inappropriate ASA assignment by nurse. The patient was found to have asthmatic attack on the day of surgery. Two cases were regard as having stable medical conditions when seen by anesthetists at Anesthetic Clinic but were thought to require further investigation (echocardiogram for cardiac murmur) and optimization (hypertension) by list anesthetists. Two

Table 4. Reasons for cancellation of cases.

Reason for cancellation	Number	% of total number of cases	% of cancellations
Surgical reason	66	2.9	47.5
Minor illness	52	2.3	37.4
Medical problem	6	0.3	4.3
Inadequate fasting	4	0.2	2.9
Incomplete investigation	1	0.04	0.7
Theatre overrun	4	0.2	2.9
Others	6	0.3	4.3
Total	139	6.1	100

Table 5. Summary of day surgery outcomes according to type of anesthesia.

	No. of cases (% of total)	Mean discharge time (mins)	% of cases discharged home by 4 hrs	No. of cases admitted overnight (admission rate)	No. of cases readmitted within 28 days (readmission rate)
General anesthesia	1746 (81.4)	270	39.5	73 (4.2%)	38 (2.2)%
Spinal anesthesia	32 (1.5)	344	14.3	11(34.4%)	0(0)
Monitored anesthetic care	333 (15.5)	167	81.7	11(3.3%)	11(3.3%)
Other regionals	35(1.6)	219	60.0	0(0)	0(0)
All types	2146 (100)	254	46.2	95 (4.4%)	49 (2.3%)

Table 6. Complications at Day Surgery Center (DSC)

	Number of cases	% of cases done
No complication	1,942	90.5
Pain requiring additional analgesic at DSC	123	*5.7*
Nausea and vomiting requiring rescue antiemetic at DSC	55	2.6
Surgical complications	10	0.5
Medical complications	1	0.05
Anesthetic complications	5	0.2
Others	10	1.2

patients were cancelled because of abnormal thyroid function test. One had hyperthyroidism, the other case was cancelled for hypothyroidism. One case was cancelled because of asthmatic attack.

Outcomes

Complications at DSC

Most patients (90.5%) had no complication (Table 6). The most common complications at DSC were pain (5.7%) and PONV (2.6%). About half (52.8%) of the patients who required additional analgesics at DSC had already received intraoperative paracetamol/non-steroidal anti-inflammatory drug, regional analgesia, local anesthetic infiltration of wound or a combination of them. Prophylactic antiemetic was given to 23 patients (1.1%). Two of the 55 patients who had PONV requiring pharmacological treatment had received prophylactic antiemetic.

Anesthetic complications occurred in 5 patients (0.2%). Three of them had lower limb weakness following ilioinguinal nerve block and one following femoral nerve block. One patient had an allergic reaction to drug.

Discharge time

The mean length of stay at DSC was 254 minutes. 46.2% of cases were discharged home by 4 hours postoperatively. The reasons for delayed discharge could not be accurately established by simple review of recovery charts, although a major reason seems to be late discharge by anesthetists and surgeons. It is a requirement at our institution that all patients are discharged by medical staff. The mean discharge time for cases done under spinal anesthesia (344 min) was longer than those done under general anesthesia (270 min). Cases done under MAC (mostly cataract surgery) had the shortest mean discharge time (167 min).

Unanticipated overnight admissions

The overnight admission rate was 4.4%. The reasons are shown in Table 7. Nearly half (49.5%) of them were admitted for surgical reasons (surgical complications, more extensive surgery than planned). Five patients were admitted for anesthetic reasons. All were due to persistent lower limb weakness, two following spinal anesthesia for knee arthroscopy and anal surgery, three following general anesthesia plus ilioinguinal femoral nerve blocks. The overnight admission rate was 8 times higher for cases done under spinal anesthesia (34.4%) compared to those done under general anesthesia (4.2%). Out of the 11 cases admitted after spinal anesthesia, 3 were admitted for surgical reasons, 3 for medical reasons, 2 due to persistent lower limb weakness, 1 due to pain, 1 due to dizziness and 1 due to late finish. There was no admission due to urinary retention after spinal anesthesia.

Readmissions

Forty-nine patients were readmitted to the hospital within 28 days of surgery. The overall readmission rate was 2.3%. The reasons for readmissions are shown in Table 8. Most (69.4%) of the readmissions were due to surgical complications which included hematoma, bleeding, wound infection, wound swelling, urinary tract infection after urologic procedures, urinary retention after urogenital or anal procedures. No readmission was directly attributed to anesthesia.

Discussion

Our cancellation rate (6.1%) compares favorably with other published results. Previously reported rates vary from 1.4% to 13.2%.[1-6] In our audit, only cases put on surgical lists and cancelled on the day-of-surgery were

Table 7. Reasons for unanticipated overnight admissions

	Number	% of overnight admissions
Surgical reason	47	49.5
PONV	9	9.5
Late finish	8	8.4
Pain	7	7.4
Medical reason	6	6.3
Anesthetic reason	5	5.3
Social reason	4	4.2
Urinary retention	4	4.2
Dizziness	3	3.2
Others	2	2.1
Total	95	100

Table 8. Causes of readmissions within 28 days

	Number	% readmissions
Surgical complications	34	69.4
Acute retention of urine unrelated to site of surgery	1	2.0
Pain	2	4.1
Medical problems	6	12.2
Unrelated surgical problems	6	12.2
Total	49	100

included. Cases cancelled due to patient refusal or illnesses known before the operation day were excluded. A high percentage of case cancellations were due to surgical reasons. This is related to the long waiting period between surgery booking and operation so that the pathologies no longer exist months after the initial surgical assessment.

Some of the cases were booked by junior surgeons and were subsequently cancelled by more senior surgeons. Arranging follow-up surgical reviews if the waiting time is long and booking of cases after approval by more experienced surgeons may decrease cancellations.

In our experience screening of cases by trained DSC nurses before referral to Anesthetic Clinic was satisfactory. We saved the costs of seeing 49% of patients at Anaesthetic Clinic with only one cancellation due to medical reason. The appropriateness of referral for anaesthetist assessment was estimated by the matching of nurse and anaesthetist assigned ASA status. Our finding (80.6%) was comparable with the 81% accuracy found in another study that measured the matching of nurses and anaesthetists views on whether anesthetist assessment prior to surgery day is required.[6] We chose to see all patients with medical problems (ASA II or above) at Anaesthetic Clinic to make sure that their conditions were stable and optimized before surgery to avoid last minute cancellations although no change in management was required in most of them. We thought our DSC nurses were not adequately trained at that stage in differentiating stable patients from those who would benefit from further optimization.

ASA physical status was used as the criterion to screen out patients who did not need anaesthetist assessment before the day of surgery because it could be easily taught to DSC nurses. However, ASA status may not predict the need for preoperative interventions.[7] It is only one aspect of preoperative assessment which should also include physical examination, airway assessment, discussion of anaesthetic methods and risks. In August 2000, we started to see all patients at Anaesthetic Clinic directly after surgery booking in order to provide more comprehensive perioperative care.

The incidence of minor complications, pain and PONV were likely to be underestimated since only those cases who required pharmacological treatment at DSC were recorded in our audit. The incidence of pain requiring additional pharmacological treatment at DSC (5.7 %) is comparable to the 5.3% incidence of severe pain (moaning, writhing in pain, initial nursing care dominated by pain control, or requiring more analgesics than ordered) in the postanesthesia care unit found in another study.[8] In their study, it was also found that type of surgery was a significant predictor of pain in the postanaesthetic care unit. Orthopaedic patients had the greatest incidence of postoperative pain. Orchidectomy, circumcision, hydrocelectomy, hernia repair, laparoscopic sterilization were also associated with a high incidence of severe postoperative pain. Increasing our anesthetists' awareness of this, and employing multimodal analgesic techniques for these painful procedures may help to improve pain control. Prophylactic antiemetic was not routine prescribed in our center. Giving this to patients at high risk of developing PONV may decrease the incidence of this complication in the future.

Transient femoral nerve palsy following ilioinguinal nerve block had resulted in delayed ambulation and unplanned admissions. It may be possible to prevent this complication by modifying the block technique. Buist suggested that contact with the ileum should be avoided and penetration should stop at a depth soon after the external oblique aponeurosis has been pierced.[9] It was found in a more recent cadaver study that femoral nerve palsy may result from tracking of local anesthetic solution in the plane between the transverses abdominis muscle and the transversalis fascia laterally to the tissue plane deep to the iliacus fascia containing the femoral nerve.[10] Avoiding injection of local anesthetic deep to the transverses abdominis was suggested by the authors. This can be achieved by infiltrating the superficial layers including the skin and external obique aponeurosis percutaneously and then infiltrating the deeper layers and the ilioinguinal nerve after surgical exposure. Using a more dilute local anesthetic solution to reduce motor block may also be useful.[11]

The mean length of stay at DSC (254 minutes) was relatively long. For many patients, discharge was delayed after home-readiness had been reached because they had to wait for both anesthetists and surgeons to see them before discharge. Earlier reassessment by surgeons and anesthetists should shorten this delay considerably. Another strategy is to delegate the task to nurses employing a discharge scoring system e.g. the Post-anesthesia Discharge Scoring System (PADS).[12] At present, we prefer discharging patients ourselves as we want surgeons to explain to patients the operative findings and the procedures performed. The anesthetists will also review patients postoperatively to make sure that they are safe for discharge and to obtain feedback on the quality of

anaesthesia and pain control provision. Future audits should document the times to reach home readiness to reflect the actual recovery times. The reasons for delayed recovery and discharge should be recorded more accurately.

The overnight admission rate (4.4%) was relatively high compared to other series (range 0.2 to 5.3%).[13-20] This can be partially explained by the low threshold for admission as beds were readily available in an acute hospital setting and the cost of admission was not apparent to both patients and doctors. Surgical reasons were the most frequent cause for unanticipated overnight admissions at our center, in common with some published studies.[14,16,19,20] The overnight admission rate after spinal anesthesia (SA) was eight times that after general anesthesia (GA). Only two of the overnight admissions after SA were directly attributed to anesthesia causing prolonged lower limb weakness. Scheduling these cases to be done as the first case in the morning to allow adequate time for recovery and modifying spinal anesthesia techniques may help to prevent unplanned admissions after SA. The factors influencing the anesthetists' preference to perform SA, for example, more advanced patient age, preexisting medical problems and the surgical procedures may, *per se*, be associated with unanticipated overnight admissions. Educating surgeons to schedule cases appropriately, DSC staff to screen carefully for social problems and to ensure availability of escorts should decrease the incidence of unplanned admissions due to late finish and social reasons.

Conclusion

This audit shows that day cases have been successfully and safely performed at our centre with satisfactory outcomes. The causes of case cancellations, complications, long discharge time, unplanned admissions, and readmissions have been identified and suggestions have been made to improve service provision in the future.

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Pain Medicine

Phantom Limb Pain and Phantom Sensation: A Pilot Survey

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Objective: **In this prospective survey, we explored (1) the incidence of phantom sensation and phantom limb pain amongst our patients, (2) severity of the pain and its effects on daily activities and (3) modalities of treatment used by our patients and their effects.**

Subjects: **All patients underwent above-knee and below-knee amputation, as an elective and emergency operation in our institute during the study period from June 2003 to March 2004.The main outcome measures were derived from the pain nurse administered standardized questionnaire.**

Results: **Fifty-six patients underwent the surgery. Thirty-two patients were available to be followed up one month after surgery. 19% of patients reported phantom sensation and 12.5% had phantom limb pain. The pain was severe in two of our patients. Pain team was consulted for their management. The pain abated with doloxene, gabapentin and amitriptyline.**

Conclusion: **The incidences of phantom sensation and phantom limb pain amongst our patients were far below those reported in literature. Further studies were needed to explain this discrepancy.**

Keywords: *Phantom sensation; phantom limb pain; survey*

Phantom limb pain is defined as pain referred to a surgically removed limb or portion thereof.[1] It is different from phantom sensation which is the sensation of the missing limb except pain,[2] and stump pain is pain in the remaining portion of the limb.[3]

The reported incidence of phantom pain varies widely from 2% to 85%.[4] Studies in recent years tend to suggest a higher incidence from 60-70%.[5, 6]

Phantom limb pain can be severe and disabling. In study by Sherman *et al*, 51% of 2,694 amputees experienced phantom pain severe enough to affect their daily activities on more than 6 days per month, and 27% for more than 15 hours per day.[7]

Because of the high reported rates and the impact of phantom pain upon quality of life, it is expected that many patients would seek medical advice for the phantom pain. However patients with this problem account for less than 1% of the current patient load in our Pain Clinic.

We have therefore conducted a survey to (1) explore the incidence of phantom pain and phantom sensation amongst our patients, (2) severity of the pain and its effects on daily activities and (3) modalities of treatment received by our patients and their effects.

Materials and Methods

The study was approved by the institution ethics committee. This is a prospective study. All patients who underwent lower limb (above-knee, AKA or below-knee, BKA) amputation during the period June 2003 - March 2004 were recruited. Verbal informed consent was obtained from the patients. To avoid inter-observer bias, a standardized questionnaire (Figure 1) was administered by the Pain Nurse.

Briefly, questions 1 and 2 were answered before the surgery. Questions 3 and 4 were answered once at one month and once again at 3 months after the surgery. The interview was performed face-to-face if the patient was in hospital or by phone if the patient was discharged.

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Figure 1. Questionnaire

Phantom Limb Pain / Phantom Sensations Questionnaire

1. About your amputation,

   Type of surgery - above-knee / below knee amputation

   Mode of anaesthesia - general anaesthesia / regional anaesthesia

   Date of surgery _____

   Preoperative diagnosis _____

2. Do you have pain in the part of limb which would be removed before the surgery? Yes / No

   If yes, on the scale of 0-10, how much pain do you have?

   (0=no pain, 10=most painful that you can image) _____

	One month after surgery	*3 months after surgery*
3. Phantom sensations		
Do you have any feelings from the part of the limb that was removed?	Yes / No	Yes / No
If yes, what part or parts of the phantom limb do they seem to come from?	_____	_____
Do the feelings make you uncomfortable?	Yes / No	Yes / No
How uncomfortable is it, on 0-10 scale?	_____	_____
(0=No, 10=extremely uncomfortable)		
4. Phantom limb pain		
Do you have any pain in the part of the limb that was removed?	Yes / No	Yes / No
How frequently do you have the pain?		
a few times per hour / a few times per day / a few times per month / always		
When the pain come, how long does it last?		
a *few seconds / a few minutes / a few hours / a few days / a few months*		
What part or parts of the phantom limb does it seem to come from?		
How do they feel like?		
swelling / cramping / gnawing / pinprick / burning / numb / dullacing / others		
On the 0-10 scale, what is the worst it ever hurts?	_____	_____
On the 0-10 scale, what is the least it hurts?	_____	_____
On the 0-10 scale, what is the usual amount it hurts?	_____	_____
Does the pain affect your		
Eating / dining?	Yes / No	Yes / No
Rest / sleep?	Yes / No	Yes / No
Reading newspaper / watching TV?	Yes / No	Yes / No
Have you discussed the pain with your doctor?	Yes / No	Yes / No
Have you tried other methods to reduce the pain and if yes, any effect?		
Western medicine	_____	_____
Chinese medicine	_____	_____
Surgeries	_____	_____
Acupuncture	_____	_____
Food / tonics	_____	_____
Qi gong	_____	_____
Yoga	_____	_____
Tai chi	_____	_____

Results

Fifty-six patients underwent below-knee (BKA) or above-knee (AKA) amputation during the study period. Sixteen patients were excluded because they could not be communicated due to dementia, advanced age or poor pre-morbid states. Eight patients died before the one-month follow-up. Out of the remaining 32 patients, two patients died before and one could not be contact at the three-month follow-up.

The mean age of the 32 patients was 69. There were nineteen men and thirteen women. One patient had the surgery performed as a result of trauma, one

Table 1. Demographic data.

	With phantom pain	Without phantom pain
Number of patients	4	28
Mean age	66	70
Gender		
Male : Female	3:1	16:12
Anesthesia		
Emergency : Elective surgery	3:1	21:7
Regional : General anesthesia	2:2	21:7
Site of amputation		
Below knee : Above knee	3:1	16:10
Pre-operative pain	4	21
Pre-operative VAS ≥ 5	0:4	10:18

suffered from malignant disease of the lower limb and the other patients from peripheral vascular disease.

Phantom sensation
Six patients reported phantom sensation at the one-month following surgery. Two patients complained of extreme discomfort. While one patient could not be contacted, two patients still experienced phantom sensation 3 months after surgery. But the level of discomfort was reduced from 10 to 0 in one patient and from 9 to 3 in another patient.

Phantom limb pain
Four of the thirty-two patients reported phantom limb pain one month after surgery. All of them had the phantom sensation as well.

One patient reported constant pain all the time, while the other three patients reported pain few times per day. The pain was episodic lasting for seconds to minutes. It was described as pinprick, swelling or numbness. Pain was felt at the missing calf or toes, and was severe in two patients. Their sleep was disturbed.

At 3-month follow-up, one patient could not be contacted. It was the same patient who reported phantom sensation and could not be contacted at follow-up. Of the three other patients, one reported no more pain while the pain was reduced in intensity in the other patients.

Pain team was consulted for the management of these three patients. Doloxene was effective in one patient. Amitriptyline and gabapentin were prescribed to the other two patients.

No other modalities of treatment (e.g. acupuncture, Chinese medicine, etc) were used or reported effective for the management of phantom limb pain by our patients.

Discussion

The results of our study are of special interest in several aspects. Firstly, there is no previous study performed in the Chinese population. Secondly, this is a prospective study, therefore recall bias is minimized. Thirdly, all interviews were conducted by the same pain nurse, and inter-observer bias was also reduced. Finally, in contrast to postal surveys that were commonly used in previous studies, patients were interviewed directly by the pain nurse when they were in hospital or via telephone for those who had been discharged. Ambiguity and misunderstandings of the questions could be clarified immediately. It was especially important for patients to differentiate phantom pain, sensation and stump pain. We believe our data are more reliable.

Phantom sensation
Six of the 32 patients (19%) had phantom sensation at one-month and the sensation persisted in two patients at the three-month after surgery. It is well below the reported incidences.[8,9] Phantom sensation, by definition, is not painful but produces discomfort to patients. Although there is no effective medical treatment and the sensation tend to abate over time, patient counseling and education is important. We believe appropriate explanation to the patients that phantom sensation is not a sign of mental illness is needed.

Table 2. Results showing data of patients with phantom sensations and pain

Patient number	**1**	**2**	**3**	**4**	**5**	**6**
Sex	Male	Male	Male	Female	Male	Male
Age	82	40	72	69	72	70
Mole of anaesthesia	SA	GA	SA	GA	SA	SA
Preoperative diagnosis	PVD	Trauma	PVD	PVD	PVD	PVD
Operation	BKA	BKA	AKA	BKA	BKA	BKA
Preoperative VAS	6	10	10	7	5	5
Phantom sensation						
One-month	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Discomfort (0-10 scale)	3	0	10	9	0	0
Site	Toes	Calf, toes	Toes, sole	Sole	Leg	Calf, toes
Three-month	**Lost contact**	**Yes**	**No**	**Yes**	**No**	**No**
Discomfort (0-10scale)		0	0	3	0	0
Site		Calf, toes	Toes, sole	Sole	Leg	Calf, toes
Phantom limb pain						
One-month	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**No**
Frequency	Always	Few times/d	Few times/d	Few times/d		
Duration	Few minutes	Few seconds	Few minutes	Few minutes		
Site	Toes	Calf, toes	Toes	Toes		
Description	Numbness	Pinprick	Swollen	Numbness		
Maximum VAS	3	8	N/A*	9		
Minimum VAS	0	0	N/A*	7		
Average VAS	3	8	N/A*	7		
Impact on eating	No	No	No	No		
Sleep	Yes	Yes	No	Yes		
Daily activities	No	No	No	No		
Three-month						
Frequency	**Lost contact**	**Yes**	**No**	**Yes**	**No**	**No**
Duration		Few times/d		Few times/d		
Description		Few seconds		Few minutes		
Maximum VAS		Pinprick		Pinprick		
Minimum VAS		4		5		
Average VAS		0		3		
Impact on eating		4		5		
sleep		No		No		
daily activities		Yes		Yes		
		No		No		
Pain team consultation	No	Yes	Yes	Yes		
Medication	No	Amitriptyline	Doloxene	Gabapentin Amitriptyline		

SA = spinal anesthesia; GA = general anesthesia; PVD = peripheral vascular disease; BKA = below knee amputation; AKA = above knee amputation; VAS = visual analog scale (0- 10; 0= no pain, 10= most severe pain that one can imagine)
*Patient number 3 cannot quantify the intensity of pain on VAS

Phantom pain

Only four of the 32 patients reported phantom limb pain (12.5%). It is also below the reported incidence of 60-70% in the literature.[5,6]

It was unlikely that we miss out patients who had not developed phantom pain or who had their pain reduced significantly during the one-month follow-up. Although case reports suggest that the onset of phantom pain can be delayed for several years after amputation,[10] prospective studies showed that the onset of phantom pain is usually during the first week.[6,11] In this regard, Pohjolainen showed that 59% patients reported their pain by 16 weeks after amputation.[12]

It is also unlikely that we underestimate the incidence of phantom pain. The low incidence of phantom pain (2-4%) reported in the past literature may be explained partly by lack of physician awareness. Many patients are also fear that they would be considered as insane if they reported the problem. This study is a prospective report and patients were asked directly as to whether they had phantom limb pain by an independent observer.

There are numerous studies on phantom pain but they are mainly confined to Caucasians. It is not known whether cultural factors may play a role in the development of phantom pain. Future studies are required to explore the discrepancy between the incidence reported in the literature and those found in the present study. A large multicenter study with a long follow up period is required to evaluate the problem.

We did not aim to, due to its small number of patients, identify the predictors of phantom limb pain (Table 1). Based on previous studies, the incidence of phantom pain is not influenced by age, gender, side or level of amputation or cause of amputation.[11,13]

Although only 4 patients experienced phantom pain in our study, the pain was very severe in two. Both of them had discussed the problem with their attending doctors and were referred to pain management team.

Treatments of phantom pain are myriad but there are no data as to which of the available methods is more efficacious. Tricyclic antidepressants such as amitriptyline are commonly recommended. But data supporting their efficacy in phantom pain are sparse.[14] Robinson *et al* in a recent randomized controlled study showed that amitriptyline was not effective in the treatment of post-amputation pain.[15] Newer agent, such as gabapentin has been reported to be useful in a case report of 7 patients with phantom pain.[16] Its favorable pharmacokinetic profile offers a few advantages, especially in patients with co-existing medical diseases. Although a weak opioid, doloxene is useful in one of our patients. No studies have been published on the role of narcotics in phantom pain.

Patients may use other modalities of treatment as an adjunct if the pain persists for a longer period. There were case reports of pain relief in phantom limb pain by acupuncture and transcutaneous electrical nerve stimulation (TENS).[17,18] However randomized controlled trials are lacking.

In conclusion, our study showed that the incidence of phantom limb pain was 12.5% and the incidence of phantom sensations was 19%. Because of the small sample size, further studies are needed to explain the apparent low incidence in local population. Phantom limb pain can be very disabling.

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Congratulations….

1. Dr CT Hung was appointed as the Cluster Chief Executive (Kowloon Central) and the Hospital Chief Executive for the Queen Elizabeth Hospital.
2. Dr YF Chow was appointed as the Chief of Services for the Department of Anaesthesia, Queen Elizabeth Hospital and the Cluster Coordinator in Anaesthesia (Kowloon Central).

Case Report

A Rhesus Negative Patient with Massive Transfusion

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We reported a case of severe hemolytic reaction due to the administration of Rhesus D immunoglobulin, Anti-D(Rho), in a Rhesus negative (Rh-ve) patient who had recently received Rh+ve red cells. This article described the mechanism of such hemolytic reaction. We also reviewed the transfusion management of Rh-ve patients undergoing major operation.

Keywords: Rhesus blood group; major operation, hemolysis

Patients with Rhesus negative (Rh-ve) blood group present an unique challenge to the anesthetists. As the Rh-ve blood is in short supply, it is important to understand the various strategies during massive transfusion.

Case Report

The patient was a 68 year old man (blood group A, Rh-ve; i.e. A-ve) admitted for radical retropubic prostatectomy. He enjoyed good past health. Preoperative assessment was unremarkable and there was no transfusion history. All investigations were normal. The hemoglobin concentration was 11.9 g/dL. A message from Hong Kong Red Cross was that only A+ve blood would be available. Possibility of Rh sensitization was discussed with the patient. Patient agreed to have autologous blood donation preoperatively with a plan to collect 2-3 units. The patient was given ferrous sulfate 300 mg per day.

Blood donation was carried out in Hong Kong Red Cross. The first unit was donated two weeks before the date of surgery and it was planned to have the second unit donated one week before the operation date. However, donation of the second unit was abandoned because a positive bacterial culture of *Strep. faecalis* from the first unit was identified. The patient remained asymptomatic. Finally the operation was performed with 3 units of homologous A-ve blood as reserve. A+ve blood would be issued if more blood was required. Preoperative hemoglobin was 10.1 g/dL.

The operation was performed under general anesthesia with invasive monitoring. Tranexamic acid 1g IVI was given. Intraoperative findings showed a small prostate with no gross extraprostatic involvement. Blood loss was 600 ml. Intraoperative hemoglobin concentration was 8 g/dL and two units of A-ve blood were transfused. The patient was transferred to Intensive Care Unit (ICU) after the operation.

In ICU, we found a new pansystolic murmur. He had a fever up to 38.5°C, and developed rapid paroxysmal atrial fibrillation. Both aerobic and anaerobic blood culture grew *Lactococcus lactis*. A transesophageal echocardiogram showed vegetations on anterior mitral leaflet with severe mitral regurgitation and ruptured of the chordae muscle. A diagnosis of infective endocarditis with severe mitral regurgitation was made. The fever subsided with vancomycin. It was decided that surgery will be required.

Mitral valve replacement was done on day 7 after initial prostatectomy. The procedure was uneventful. The cardiopulmonary bypass time was 2 hours and 50 min. The aortic cross clamp time was 1 hour and 45 min. Blood product was not used during the operation. Hemoglobin concentration at end of operation was 10 g/dL. Postoperatively there was hemothorax and persistent wound drainage (> 2 L over 12 hours). Hemoglobin concentration decreased to 5.7 g/dL. The patient received 4 units of A-ve blood, 5 units of O-ve blood and 3 units A+ve fresh frozen plasma (FFP). At

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Table 1. Summary of blood products used after initial prostatectomy (day 0).

	Blood	Fresh Frozen Plasma	Platelet concentrate
Day 0	2 O-ve		
Day 7	3 A-ve		
	5 O-ve	3 A-ve	
	1 A-ve		
	5 A+ve	6 A+ve	5 A+ve
			1 A-ve
	5 A+ve	10 A+ve	4 A+ve
Day 8		4 A+ve	3 A+ve
Day 5		1 A+ve	1 O+ve
Day 11	2 A-ve		

the end of resuscitation, the platelet count was 120×10^9/L, international normalized ratio was 1.4 and the, activated partial thromboplastin time was 56 s.

The next morning, the patient was taken back to the theatre for haemostasis and relief of cardiac tamponade. There was generalized oozing from the primary surgical site. Intraoperative blood loss was 3,500 ml and hemoglobin concentration decreased to 4 g/dL. At this stage, the blood bank was unable to supply further Rh-ve blood. A+ve blood was therefore provided with Rh (D) immunoglobulin (anti-D(Rho)). Altogether, we gave 5 units of A+ve pack cells, 6 units of A+ve FFP and 5 units of A+ve and 1 unit of A-ve platelet concentrate. We did not give anti-D(Rho) because we thought it was ineffective during the setting of massive transfusion. Postoperatively, the patient received another 5 units of A+ve pack cells, 14 units A+ve FFP and 7 units A+ve platelet concentrate. Subsequently Anti-D(Rho) 600 μg IVI, eight hourly was given. A summary of blood products used over the course is summarized in Table 1.

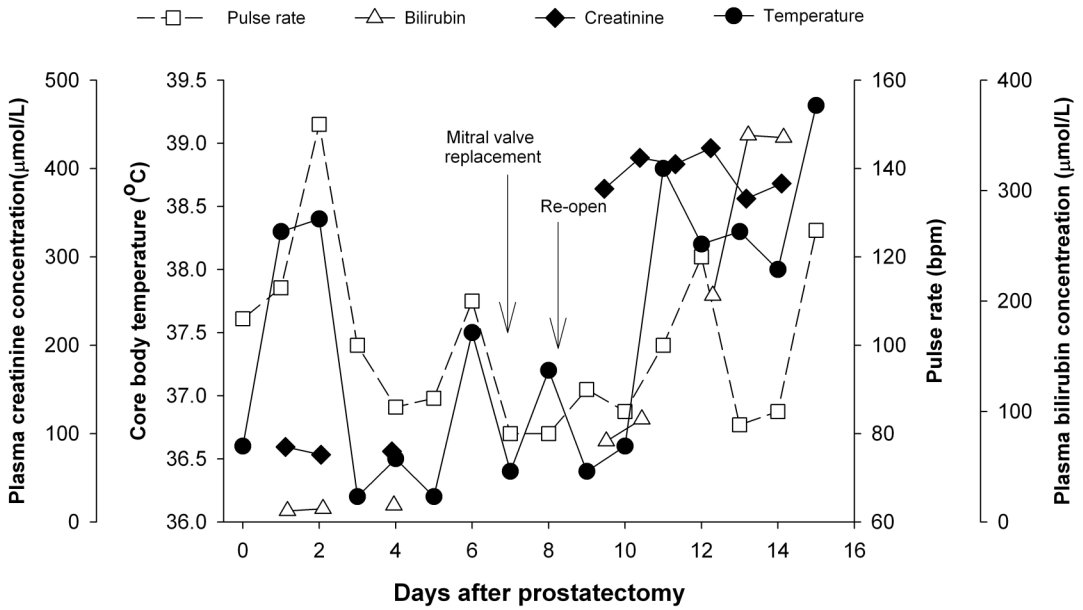
Hemolysis

On subsequent days, the patient remained unstable with high fever. The bilirubin concentration increased progressively to 350 μmol/L. The renal function also deteriorated and required frusemide infusion to maintain an urine output > 0.5 ml/kg/h.

Despite further decrease in hemoglobin concentration from around 10 g/dL to 7 g/dL. Transfusion was not performed due to the shortage of A-ve blood and a lower transfusion trigger was adopted. Erythropoietin 2000 U three times per week was started subcutaneously.

Blood group serology showed a positive direct antiglobulin test. Anti-D was present in the red cell eluate. Heptoglobin was < 0.03 g/L. Anti-IgG was positive and Anti C3 was negative supporting the diagnosis of hemolytic anemia. We believe this was related to a reaction between Anti-D(Rho) and Rh+ve red cell given to the patient 3 days ago. Anti-D(Rho) was stopped but the patient continued to deteriorate. The patient finally developed renal and liver failure. He died on day 16 after the initial operation due to multi-

Figure 1. Changes in temperature, plasma creatinine, bilirubin and pulse rate over the course of treatment.



organ failure.

Discussion

The Rhesus System

Rhesus system contains more than 50 antigens. However, C c, E e and D are the dominant antigens. Seventeen percent Caucasians are Rh-ve whereas only 0.27% Hong Kong Chinese are Rh-ve. Therefore, we seldom encounter a Rh-ve patient. Similarly, we can hardly have enough supply of Rh-ve unit as Rh-ve donors are scarce. Blood for transfusion is not matched routinely for the Rhesus antigens other than D. Often, Rh–ve or Rh+ve individuals are transfused with red cells incompatible for C, c, E, or e. The risk of sensitization to these antigens is, however negligible.

Anti-D may result in serious hemolytic transfusion reactions and remains a major cause of severe haemolytic disease of newborn. Other antigens in Rhesus system are less immunogenic than D.

Rhesus Antibodies

Antibodies to the various Rhesus antigens usually develop after exposure to foreign red blood cell (RBC) through pregnancy or transfusion but may on occasion be naturally occurring. Rhesus antibodies are IgG, but may have an IgM component early in the immune response; they do not fix complement and are best detected by the indirect antiglobulin test in which patient's serum is added to reagent RBCs with known RBC antigens.

Rhesus Immune Response

The primary immune response develops slowly after exposure to the antigen. Detectable Anti-D may appear as early as 2 to 10 weeks. The calculated average time for antibody formation in a recent series is 5 weeks.[1] This may be due to the variability in assay sensitivity. However, anti-D was detected only 3 days after exposure to Rh+ve blood in our patient. We believe this is the Anti-D(Rho) given to the patient.

The primary response is usually weak and is IgM in nature. IgM anti-D does not produce hemolysis *in vivo*.[2] A significant portion of patients then start to produce IgG anti-D, but in a small amount. Anti-D IgG produced in the primary response does not cause significant hemolysis due to the small amount produced. In the literature, there is no case of delayed hemolytic transfusion reaction or hemolytic disease of newborn following primary immunization has been reported. Thus, the hemolysis seen in our patient was due to the reaction between the Anti-D(Rho) and the Rh+ve red cells transfused.

Once the primary response has developed, the patient became sensitized even if no anti-D can be detected. Another exposure to the antigens produces a rapid increase in the level of anti-D, which is mostly IgG leading to delayed hemolytic transfusion reaction or hemolytic disease of newborn. In delayed hemolytic transfusion reaction, the direct antiglobulin test is positive, with a mixed field agglutination pattern, if performed before all the transfused cells have been destroyed.

Mechanism of RBC Hemolysis

Most reaction involving anti-A and anti-B antibodies result in instantaneous intravascular hemolysis with hemoglobinemia and hemoglobinuria. It is because these antibodies fix complement. The RBC debris is then removed by the liver, principally by the reticuloendothelial cells. Anti-D does not fix complement. The mechanism of destruction involves the attachment of antibody-sensitized red cells to macrophages. The spleen is the principal site of interaction. Anti C3 was negative and hemoglobinemia and hemoglobinuria were absent in our patient confirming that the hemolysis seen in our patient was not due to complement fixation.

Probability of Anti-D development in D-ve patients receiving D+ve RBC

Based on volunteer studies between 1974-1981, the probability of Rh immunization in Rh-ve individual is greater than 80% after antigenic stimulation with one or more units of Rh+ve blood.[3-5] However, a recent retrospective study on trauma or critically ill Rh-ve patients receiving Rh+ve RBC, the overall rate of antibody formation was 30.4%.[1] The difference might be due to stress-induced immune suppression seen in these groups of patient. The data of this study also showed an inverse correlation between the probability of antibody formation and the number of units of RBC given. It is suggested that this is due to high zone tolerance, i.e. a very high antigen dose enhanced apoptosis of B-cell germinal center.[6,7]

A fair number of Rh-ve patients will still produce anti-D when the immunizing dose is very small. Anti-D was found in 15% of Rh-ve persons injected with 1 ml of Rh+ve RBC.[8] This has important implication on platelet concentrate transfusion. The very small amounts of Rh+ve RBC in the platelet concentrate can

invoke anti-D production in non-immunosuppressed Rh-ve patients. In immunosuppressed Rh-ve patients, the reaction is different.[9]

Rh (D) Immunoglobulin (Anti-D(Rho))

Rh (D) immunoglobulin is manufactured from human plasma containing anti-D. It can be given intravenously or intramuscularly. They have different pharmacokinetic properties (Table 2).

Table 2. The pharmacokinetic properties of Anti-D(Rho) 120 μg (600 IU) given intravenously (IV) or intramuscularly (IM).

	IM	IV
Peak levels (ng/ml)	18 –19	36-48
Time to peak levels	5-10 days	< 2 hrs
T½ (days)	30	24

Anti-D(Rho) is used to suppress Rhesus immunization of non-sensitized Rh-ve patient who receive Rh+ve RBC either during delivery of an Rh+ve infant, abortion, following amniocentesis, or accidental transfusion. The exact mechanism of action is unknown.[10] When Anti-D(Rho) is used to prevent immunization following the inadvertent transfusion of Rh+ve blood to a Rh-ve patient, it seems that the primary mechanism involved is rapid clearance of the Rh+ve red cells.[10-12] This may be different to the situation in which Anti-D(Rho) acts when injected into a Rh-ve woman who has just delivered a Rh+ve child. It is hypothesized that down regulation of antigen-specific B cells through co-ligation of B cell receptors and inhibitory IgG Fc receptors may be important.[12]. Anti-D(Rho) can prevent Rhesus immunization when given within 72 hours of exposure to the Rh+ve red cells.[13,14] It must be noted that there is no serological tests to distinguish between passive (Anti-D(Rho)) and active anti-D.

Management of Rh-ve patients requiring transfusion

The use of Rh+ve blood for Rh-ve patients is best avoided because of the very high immunogenicity of D antigen. Although when Rh-ve patients who have no anti-D are transfused with Rh+ve blood, the Rh+ve RBC will survive normally as no hemolysis is seen during primary response. There are a number of reasons to avoid routine use of Rh+ve blood for Rh-ve patients. Firstly, once the anti-D is made, it can cause severe hemolytic disease in subsequent transfusion. Secondly, it is difficult to be absolutely certain that an Rh-ve patient has not been sensitized because the resting anti-D concentration can be very low.[15] Thirdly, there is high chance of Rh immunization when given Rh+ve RBC so that Rh-ve RBC should be used in subsequent transfusions. Thus, Rh-ve patients must not be put at later risk of not being able to receive Rh+ve blood, when Rh-ve units are not available, unless there is no alternative.

Currently, the daily stock of Rh-ve red cells in the Hong Kong Red Cross is 10 units group O-ve and 6 units of group A-ve and B-ve.[16] There is no regular stock or supply of Rh-ve platelet concentrate. The priority of prescribing these units to individual patient is:

(1) Neonates suffering from HDN due to anti-D;
(2) D negative individuals with anti-D;
(3) D negative females before menopause;
(4) D negative individuals;
(5) Emergency resuscitation of Caucasian female of reproductive age with unknown D status.

The management of Rh-ve patients requiring transfusion would certainly depend on the urgency of the situation. For emergency transfusion, one has to use Rh+ve units if there is no Rh-ve stock in the hospital. For elective transfusion, the factors affecting the decision include the type of operation, the need for red cells or other blood products, number of units needed, patient's priority for Rh-ve products and the availability from the Hong Kong Red Cross. Direct communication among all parties including surgeons, anesthetist, hematologist, staff in blood bank, and the patient is very important.

If there is limited supply of Rh–ve blood, various blood conservation techniques can be considered. These methods have been reviewed elsewhere.[17,18] We employed preoperative autologous blood donation for our patient. Acute normovolemic hemodilution was not considered because of the low preoperative hemoglobin concentration. It is also uncertain as to the cost effectiveness of acute normovolemic hemodilution in reducing the risk of allogenic blood transfusion.[19] Two other techniques may be useful in our patient. Intraoperative blood salvage procedure involves recovery of the patient's blood bleed from a surgical wound, and return of the blood into the patient after washing or filtering. It is an effective blood conservation option.[20] Previously, there are worries about introduction of tumor cells into the patient with oncologic surgery. There is now evidence in support of using WBC reduction filters in cancer surgery with large blood loss with no increase in incidence of tumor recurrence.[21,22] The other method is the use of antifibrinolytics in cardiac surgery. In cardiac surgery, multiple randomized, placebo-controlled trials have

confirmed that high dose aprotinin reduces bleeding and decreases the need for allogeneic transfusion.[23,24] There is almost two folds decrease in mortality compared with placebo in complicated cardiac surgery.[25]

When Rh-ve blood is in short supply, Rh+ve blood can be given to patient who has no anti-D in plasma. This is particularly valuable in a life-saving emergency situation. If a non-immunized Rh-ve patient requires massive transfusion and Rh-ve units is in short supply, it is recommended to begin with Rh+ve blood than to exhaust the supply of Rh-ve units before switching back to Rh+ve blood. There is little point in giving Rh-ve blood again when the bleeding is stopped. It is because the patient will almost certainly be sensitized. Rh immunization is not likely to be prevented by the use of Rh-ve blood near the end of the surgery. It is also unlikely that the patient will have a delayed transfusion reaction. Thus, Rh+ve RBC should be used postoperatively in our patient if Anti-D(Rho) had not been given.

For Rh-ve patient with anti-D with massive transfusion, we believe it is best to begin transfusion with Rh+ve blood. Much of the blood transfused will be lost initially through continuous bleeding. However, it may be advisable to transfuse Rh-ve units towards the end. This should lessen the degree of hemolytic anemia. The patients may still develop delayed hemolytic reaction with different severity. Severe reactions need to be treated with exchange transfusion with Rh-ve products.

Rh Immunization prophylaxis

Rh–ve platelet concentrate is not available. Variable amount of RBC are found in platelet concentrate. Trace (< 0.1 ml) to small amounts (0.5 ml) of red cells can be found. As discussed previously, this amount of red cell can cause Rh immunization. Anti-D(Rho) can be used to prevent immunization by the Rh+ve red cells, it will not interfere with the platelets infused since platelets do not carry Rh D antigen. Anti-D(Rho) at a dose of 50 μg (250 IU) per 5-6 units is effective in preventing Rhesus immunization. Anti-D(Rho) may be omitted in immunosuppressed patients because the risk of Rh immunization is extreme low.[9]

In terms of plasma transfusions, fresh liquid plasma (that also contains a few intact red cells) has been reported to cause both primary immunization and secondary response. Fresh frozen plasma does not seem to have been a cause of primary immunization to D. Although a case report suggested that cryoprecipitate may contain enough material derived from RhD, to stimulate production of anti-D in an Rh-ve hemophiliac.[26] Nevertheless, this is a very rare event. Currently, Anti-D(Rho) is not prescribed for FFP and cryoprecipitate transfusion.

If Rh+ve RBC is transfused to a Rh-ve patient by accident, Anti-D(Rho) should be given. The amount of Anti-D(Rho) needed can be greatly reduced by performing a partial exchange transfusion with Rh-ve blood before the Anti-D(Rho) is injected. Prevention of Rh immunization to D must be based on the patient's gender, age and the potential to bear children. It can be considered in reproductive age female patient and Rh+ve RBC < 20% of total blood volume.[10] Anti-D(Rho) is not recommended for male patient, female patient who has past her reproductive age and Rh+ve RBC > 20% total blood volume. If large volumes of Rh+ve RBC are to be destroyed in a previously anemic patient, supportive red cell transfusion with Rh-ve blood may become necessary. The reaction can also trigger a severe hemolytic reaction as shown in this case. The recommended dose of Anti-D(Rho) is 20 μg per ml of Rh+ve red cell given within 72 hours of transfusion. IV infusion is preferred because intramuscular administration has low bioavailability. More importantly, the patient should be monitored for hemolysis after large dose of Anti-D(Rho) is given.

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WORKSHOPS ORGANISED BY THE INSTITUTE OF CLINICAL SIMULATION

A Collaboration between the Hong Kong College of Anaesthesiologists and the North District Hospital

(Application form can be downloaded from the College website: *www.hkca.edu.hk*)

Anaesthetic Crisis Resource Management (ACRM)

Date:	First Saturday of each month - slots available from March 2005 (4 June, 2 July, 6 August, 3 September, 10 September, 5 November and 3 December, 2005)
Time:	08:00 – 18:00
Venue:	The Institute of Clinical Simulation
CME points:	HKCA 10 points
Max participants:	4
Fee:	HK$2000 per head
Format:	Each registrant will participate in (1) An introduction on the METI Simulator, the anesthetic machine for use in the workshop and the theories of crisis management (2) Allocated time for hands-on crisis scenario management on the METI Simulator, rotating through different roles and handling different scenarios (3) A group debriefing session at completion of each scenario

"Group" registration welcome if you can find your own partners to form a group of four. Mutually agreed dates may be arranged. Sessions will be videotaped. All participants in the workshop will be required to sign a confidentiality statement.

Difficult and Advanced Airway Management (DAAM) Workshop

Time:	22 October 2005
Venue:	Institute of Clinical Simulation
CME points:	HKCA 4.5 points
Max participants:	16
Fee:	HK$1,200 per head

Objectives:

(a) Recognition of patients with potential difficult airway or impossible tracheal intubation
(b) Practice of Airway Algorithm on situations of failure to oxygenate patients
(c) Description and application of suitable ventilatory techniques to oxygenate patients with predicted and unpredicted difficult airways.

Programme:

(1) Lectures on basic knowledge of airway management
(2) Videotapes on different techniques of recent and advance airways
(3) Tutorial discussion on common causes of airway problem
(4) Skill stations on various techniques
(5) MCQ and OSCE assessment after the course

Highlights of interesting techniques and skill stations:

(1) Virtual bronchoscopy training on computer model
(2) Practice bronchoscopy on pig's lung
(3) Different gadgets on one-lung ventilation in difficult situations (Univent, Arndt's wire-guided endobronchial blocker)
(4) Bullard laryngoscope workstation
(5) Cricothyrotmy sets and techniques

Council Highlights

Congregation

The Council has recently discussed and reviewed the procedures of the annual College Congregation and has resolved to appoint Drs Matthew Chan and Vivian Ng as the Protocol and Marshalling Officers for the 20th Congregation, respectively.

The College would like to encourage more graduating fellows and their family or friends to attend the Annual Congregation. We believe this is an important event for the College and fellows to share their achievements and successes with others.

The Council has resolved, for graduating fellows who present themselves to the Congregation, they are entitled to the following benefits:

(1) Free registration for the associated Annual Scientific Meeting.
(2) Complimentary dinner tickets will be provided to the graduating fellows and two other accompanying persons. Additional ticket (the fourth ticket) will be charged at 50% of the cost.
(3) A professional photographer will be hired to take pictures at the graduation ceremony. Digital photographs will be provided to graduating fellows free of charge.
(4) Graduating fellows will also be allowed to keep the College gown for up to a week for picture taking.

Visiting Clinical Scholarship

In line with the policy of the Hong Kong Academy of Medicine, the College is currently exploring ways to support academic linkages with anesthetic colleagues in the Mainland. Hopefully, this will result in better understanding at the institutional and/or departmental level.

As an initiative, the Council has resolved to establish one visiting clinical scholarship per year. The scholarship will allow a visiting scholar from any anesthetic department in the Mainland to visit Hong Kong for a period of no more than twelve months. The College will assist the visiting scholar with the application for temporary medical registration (with the Hong Kong Medical Council), so that the (s)he is allowed to gain clinical experiences in any hospital run by the Hospital Authority. The hosting department/hospital should apply to the Hospital Authority for appropriate clinical appointment and medical indemnity insurance. The visiting scholar will not occupy the usual training position as stipulated by the Board of Accreditation.

Support for the visiting scholar will usually include (1) a reasonable amount of cash for living allowance (to be provided by the College), and (2) accommodation on hospital quarters/campus (to be provided by the hosting department/hospital).

<u>Eligibility/Application</u>

Individual department intending to bring in visiting clinical scholars should apply to the College (office@hkca.edu.hk). A proposal should include the nature of work during the period and a copy of the curriculum vitae of the visiting scholar. An ad hoc committee will consider the application on a case-to-case basis.

Figure. A delegation of HKAM visited the Chinese Academy of Sciences and introduced the Academy and its Colleges to their officials. Dr YF Chow (College Hon. Secretary: left).

Honorary Treasurer's Report for Financial Year 2004

I am pleased to report that the financial status of our College is in good shape. In year 2004, we had a surplus of HK$933,465. Together with the retained surplus brought forward from 2003, our total assets stood at HK$10,621,767 at the end of last year.

Income

Annual subscriptions by members and fellows remained our major source of income. Twenty-nine new members, twenty-four new anesthetic fellows and two intensive care fellows joined our College last year. Income from subscriptions was HK$1,007,876.

Interest rate remained low in 2004. Income from interest was a paltry HK$4,251. This was a decrease of almost 93% compared to year 2004. Last year, for the first time in the history of the College, we invested about $1.1 million of our surplus in Government bonds (五隧一橋). Interest generated from the bonds amounted to $10,143.

The Annual Scientific Meeting 2004 jointly organized by the Society of Anaesthetists of Hong Kong, Hong Kong Society of Critical Care Medicine and our College was a great success. Profits from the meeting were shared equally between the Society of Anaesthetists of Hong Kong and our College and our College share of profit was HK$247,244.

Various courses for Intermediate and Final examinations were organized in 2004. Income from courses was HK$118,271.

Two intermediate and two final examinations, one pain examination and four exit examinations were held in 2004. Incomes from these examinations were HK$233,472, a slight increase from last year.

Expenditure

Total expenditure by our College in year 2004 was HK$763,436. The major expense was in salary, maintenance of the College chamber.

Annual Subscription

It was resolved that the annual subscription for year 2005 would stand at:

Fellows	**$2,500**
Members	**$1,250**
Overseas Fellows	**$625**
Overseas Members	**$313**

For members and fellows over 65 years of age, a nominal subscription of $50 would be charged.

Appreciation

The healthy financial status of our College is the result of the efforts and time of many of our dedicated fellows. I would like to take this opportunity to thank the organizing committee of the annual scientific meeting 2004, council members and organizers of various courses and examinations. I would particularly like to thank Mr. Daniel Tso, Ms Flora Wong and Ms Mandy Ma for helping me with the daily running of the account.

Dr Joseph Lui
Hon. Treasurer
April 2005

AUDITORS' REPORT TO THE MEMBERS OF THE HONG KONG COLLEGE OF ANAESTHESIOLOGISTS

(incorporated in Hong Kong with liability limited by guarantee)

We have audited the accounts on pages 35 to 40 which have been prepared in accordance with accounting principles generally accepted in Hong Kong.

RESPECTIVE RESPONSIBILITIES OF COUNCIL MEMBERS AND AUDITORS

The Companies Ordinance requires the directors to prepare accounts which give a true and fair view. In preparing accounts which give a true and fair view it is fundamental that appropriate accounting policies are selected and applied consistently.

It is our responsibility to form an independent opinion, based on our audit, on those accounts and to report our opinion solely to you, as a body, in accordance with section 141 of the Companies Ordinance, and for no other purpose. We do not assume responsibility towards or accept liability to any other person for the content of this report.

BASIS OF OPINION

We conducted our audit in accordance with Statements of Auditing Standards issued by the Hong Kong Institute of Certified Public Accountants. An audit includes examination, on a test basis, of evidence relevant to the amounts and disclosures in the accounts. It also includes an assessment of the significant estimates and judgments made by the council members in the preparation of the accounts, and of whether the accounting policies are appropriate to the college's circumstances, consistently applied and adequately disclosed.

We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance as to whether the accounts are free from material misstatement. In forming our opinion we also evaluated the overall adequacy of the presentation of information in the accounts. We believe that our audit provides a reasonable basis for our opinion.

OPINION

In our opinion the accounts give a true and fair view of the state of the college's affairs as at 31st December, 2004 and of its surplus for the year then ended and have been properly prepared in accordance with the Companies Ordinance.

R. Kadir & Company
Certified Public Accountants (practising)

HONG KONG,

THE HONG KONG COLLEGE OF ANAESTHESIOLOGISTS
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st DECEMBER, 2004

	Notes	2004	2003
TURNOVER		HK$	HK$
Members' entrance fees and subscriptions		1,007, 876	914,689
OTHER REVENUE			
Donation		511	-
Interest on bank saving accounts		4,251	60,079
Interest on held-to-maturity debt securities		10,143	-
Miscellaneous		68,524	110,224
Surplus from events :-			
Annual scientific meeting	3	247,244	184,835
Institute of Clinical Simulation	4	6,609	9,718
Courses	5	118,271	41,187
Examination	6	233,472	204,762
		689,025	610,805
TOTAL REVENUE		1,696,901	1,525,494
EXPENDITURE			
Audit fee		7,000	6,000
Bank charges		914	1,070
Crown rent and rates		7,161	6,497
Depreciation		29,630	12,756
Educational materials		164,925	1,056
Functional expenses		-	12,520
Handling fee for purchasing bonds		1,649	-
Insurance		35,932	35,870
Management fee		73,980	73,980
Members' subscriptions written off		43,750	14,476
Miscellaneous		53,989	28,980
Mandatory provident fund		10,300	10,200
Postage, printing and stationery		41,573	23,645
Salary		289,225	204,000
Secretarial fees		-	7,000
Subscriptions		3,408	6,740
		763,436	444,790
SURPLUS FOR THE YEAR		933,465	1,080,704
RETAINED SURPLUS BROUGHT FORWARD		9,688,302	8,607,598
RETAINED SURPLUS CARRIED FORWARD		10,621,767	9,688,302

THE HONG KONG COLLEGE OF ANAESTHESIOLOGISTS
BALANCE SHEET AS AT 31ST DECEMBER, 2004

	Note	2004 HK$	2003 HK$
NON CURRENT ASSETS			
Fixed assets	8	52,130	25,512
Held-to-Maturity debt securities	9	1,099,230	-
		1,151,360	25,512
CURRENT ASSETS			
Accounts receivable		56,870	242,088
Cash and bank balances		10,068,915	9,998,920
Prepayment		122,831	-
		10,248,616	10,241,008
LESS : CURRENT LIABILITIES			
Accounts payable and accruals		778,184	575,768
Receipt in advance		25	2,450
		778,209	578,218
NET CURRENT ASSETS		9,470,407	9,662,790
NET ASSETS		10,621,767	9,688,302
Represented by :			
RETAINED SURPLUS		10,621,767	9,688,302

THE HONG KONG COLLEGE OF ANAESTHESIOLOGISTS
FOR THE YEAR ENDED 31ST DECEMBER, 2004
STATEMENT OF CHANGES IN EQUITY

	2004 HK$	2003 HK$
Opening balance - Total equity	9,688,302	8,607,598
Net surplus for the year	933,465	1,080,704
Closing balance - Total equity	10,621,767	9,688,302

THE HONG KONG COLLEGE OF ANAESTHESIOLOGISTS
NOTES TO THE ACCOUNTS

1. INCORPORATION

The college was incorporated on 26th September, 1989 under the Companies Ordinance and its liability is limited by guarantee.

Under the provisions of the college's Memorandum and Articles of Association, every member shall, in the event of the college being wound up, contribute to the assets of the college to the extent of HK$100. At 31st December, 2004, the college had 465 members.

2. PRINCIPAL ACCOUNTING POLICIES

The principal accounting policies adopted in the preparation of the accounts are set out below.

(a) Basis of preparation

The accounts have been prepared in accordance with generally accepted accounting principles in Hong Kong and comply with accounting standards issued by the Hong Kong Institute of Certified Public Accountants. The accounts are prepared under the historical cost convention.

(b) Revenue recognition

Donation is recorded on the cash basis.

Entrance and subscription income is recognized when the right to receive payment is established.

Bank Interest income and interest on held-to-maturity debt securities are recognized on a time proportion basis, taking into account the principal amounts outstanding and the interest rates applicable.

Revenue on other events is recognized when the right to receive such revenue has been established.

(c) Held-to-maturity debt securities

Held-to-maturity debt securities are stated in the balance sheet at cost plus or less any discount or premium amortized to date. The discount or premium is amortized over the period to maturity and included as interest income or expense in the profit and loss account. Provision is made when there is diminution in value other than temporary.

The carrying amount of individual held-to-maturity debt securities is reviewed at the balance sheet date in order to assess the credit risk and whether the carrying amounts are expected to be recovered. Provisions are made when carrying amounts are not expected to be recovered and are recognized in the profit and loss account as an expense immediately.

(d) Depreciation

Fixed assets are stated at cost less accumulated depreciation.

Depreciation of fixed assets is calculated to write off the cost of assets over their estimated useful lives, using the straight line basis, at the following annual rates:-

Furniture and equipment	20%
Computers	30%

(e) Employee benefits

The company has established a mandatory provident fund scheme ("MPF Scheme") in Hong Kong. The assets of the MPF Scheme are held in separate trustee-administered funds. Both the company and the employees are required to contribute 5% of the employee's relevant income, subject to a maximum of HK$1,000 per employee per month. The company's contributions to the MPF Scheme are expensed as incurred.

3. ANNUAL SCIENTIFIC MEETING

	2004 HK$	2003 HK$
Income	1,083,850	1,000,750
Less : Cost and expenses	589,363	631,080
	494,487	369,670
Less : 50% profit shared with ISAP	247,243	184,835
	247,244	184,835

For the year ended 31st December, 2003, the combined scientific meeting was organized jointly with the International Society for Anesthetic Pharmacology ("ISAP"). The college and ISAP agreed to share the income and expenses of the meeting equally.

For the year ended 31st December, 2004, the combined scientific meeting was organized jointly with The Society of Anaesthesia of Hong Kong ("SAHK"). The college and the SAHK agreed to share the income and expenses of the meeting equally.

4. INSTITUTE OF CLINICAL SIMULATION

	2004 HK$	2003 HK$
Income	99,359	71,400
Less : Cost and expenses	86,141	51,963
	13,218	19,437
Less : 50% profit shared with the North District Hospital	6,609	9,719
	6,609	9,718

The Institute of Clinical Simulation was organized jointly with the North District Hospital ("the Hospital"). The college and the hospital agreed to share the income and expenses of ICS equally.

5. COURSES

	2004 HK$	2003 HK$
Income	307,600	124,678
Less : Cost and expenses	189,329	83,491
Surplus	118,271	41,187

6. EXAMINATION

	2004 HK$	2003 HK$
Income	755,300	802,000
Less : Cost and expenses	521,828	597,238
Surplus	233,472	204,762

7. STAFF COSTS

	2004 HK$	2003 HK$
Salaries	289,225	204,000
Mandatory provident fund	10,300	10,200
	299,525	214,200

8. FIXED ASSETS

	Furniture and equipment HK$	Computers HK$	Total HK$
Cost			
At 31st December, 2003	225,464	25,869	251,333
Additions	-	56,248	56,248
At 31st December, 2004	225,464	82,117	307,581
Accumulated depreciation			
At 31st December, 2003	199,952	25,869	225,821
Charge for the year	12,756	16,874	29,630
At 31st December, 2004	212,708	42,743	255,451
Net book value			
At 31st December, 2004	12,756	39,374	52,130
At 31st December, 2003	25,512	-	25,512

9. HELD-TO-MATURITY DEBT SECURITIES

	2004 HK$	2003 HK$
Held-to-maturity debt securities listed in Hong Kong	1,099,230	-
Market value	1,112,886	-

The held-to-maturity debt securities represent HK$1,100,000 HKSAR Government Bond which were allotted on 26th July, 2004. Interest is calculated at 2.13% per annum on the principal amount of the bond up to the date of maturity on 24th July, 2006.

10. TAXATION

The college is exempt from Hong Kong profits tax by reason of being a charitable institution.

11. APPROVAL OF ACCOUNTS

The accounts set out on pages 35 to 40 were approved by the council members on 21st April, 2005 (149th Council meeting).

UPDATE ON HOSPITAL ACCREDITATION 2005

Cluster	Hospital(s)	Posts	Modular System*	'Old" system† (month)	Expiry (P=Probation)
New Territories West	Tuen Mun Hospital	14 total	✓	CAT A (36)	31 Dec. 2009
New Territories East	Prince of Wales Hospital	20	✓	CAT A (36)	31 Dec. 2009
	North District Hospital	6	✓	CAT B (24)	31 Dec. 2009
	Alice Ho Miu Ling Nethersole Hospital	3	✓	CAT B (12)	31 Dec. 2009
Hong Kong East	Pamela Youde Nethersole Eastern Hospital	10	✓	CAT B (24)	31 Dec. 2009
	Ruttonjee Hospital - Tang Shiu Kin Hospital - Tung Wah Eastern Hospital	1	✓	CAT B (6)	31 Dec. 2009
Hong Kong West	Queen Mary Hospital	20	✓	CAT A (36)	31 Dec. 2009 (P)
	Grantham Hospital	2	✓	CAT C (6–12)	31 Dec. 2009
	Duchess of Kent Hospital	1	✓	CAT C (6)	31 Dec. 2009
Kowloon West	Kwong Wah Hospital	12	✓	CAT B (24)	31 Dec. 2009 (P)
	Princess Margaret Hospital	6	✓	CAT B (24)	31 Dec. 2009 (P)
	Yan Chai Hospital	3	✓	CAT B (12)	31 Dec. 2009 (P)
	Caritas Medical Center	4	✓	CAT B (24)	31 Dec. 2009

John Liu
Chairman, Board of Accreditation

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†**Category A hospitals are:**

1. Major hospitals
2. Can provide 75-80% of the range of anesthetic training to trainees
3. Has a service load of around 15,000 cases
4. Has subspecialty anesthetic services well developed
5. Has a more than adequate number of trainers when compared to trainees
6. Should have accredited 3-4 years of training in anesthesia

Category B hospitals are:

1. Small to medium size hospitals (generally < 1,000 beds)
2. Provide basic anesthetic training for trainees
3. Can provide one or two subspecialty training for trainees
4. Has a caseload varying between (5,000-10,000) cases or in the medium sized hospitals a caseload of 10,000-15,000 cases.
5. Has adequate facilities, sufficient senior anesthetists to provide the anesthetic programmes available to it, including the supervision and teaching component, and out-of-hours call

Category C hospitals are:

Those which concentrate on subspecialty practice.

***CORE modules**

1. anesthesia for general surgery/urology/gynecology (500 cases)
2. anesthesia for orthopedics and traumatology (500 cases)
3. obstetric anesthesia (100 cases) and obstetric regional analgesia (50 cases)
4. neuroanesthesia (100 cases)
5. thoracic anesthesia (50 cases)
6. pediatric anesthesia (100 cases of children ≤ 6 years, including neonates)
7. anesthesia for head and Neck/ENT/Oro-facio-maxillary surgery (100 cases)
8. emergency /trauma anesthesia (500 cases)
9. acute pain management (300 patient-days)

NON-CORE modules (two modules from Category 1 and a minimum of 20 cases from Category 2)

Category 1

1. ophthalmic anesthesia (50 cases)
2. day surgery anesthesia (100 cases)
3. anesthesia in non-operating theatre locations including but not limited to organ imaging suite, endoscopy suite, cardiac catheterization laboratory, electroconvulsive therapy (50 cases)
4. pain medicine (50 chronic/cancer pain cases)

Category 2

1. major vascular anesthesia
2. cardiac anesthesia
3. transplant anesthesia
4. neonatal anesthesia

Board of Education

A Supervisor of Training meeting will be held on 27th August 2005 (10:45 AM - 12:15 PM) during the Combined Scientific Meeting 2005.

During this meeting, problems related to the new training curriculum, in Training assessment as well as eLogBook will be discussed. Please send your opinion and/or comments to your Supervisor of Training or the College Training Officer (Dr CH KOO, kooch@hutchcity.com) for discussion during this meeting.

An electronic Training record has also been proposed. With this eTraining module, trainees can update their training record online. Suggestions are welcome for information to be included.

Dr YF Chow,
Chairman, Board of Education

Approved Formal Projects

HO, Yau Leung	The AHNH Recovery Room Discharge Criteria: Development, Reliability and Validation
CHENG, Yat Hung	Prospective Survey of Perioperative Airway Complication in Chinese Children with Upper Respiratory Tract Infection in a Regional Hospital
HO, Sin Shing	Cerebral State Index to Predict Patient Responsiveness during Sevoflurane Anesthesia. A comparison with Bispectral Index
YIP, Man Alexandra	Retrospective review of an acute pain service for paediatric patients
LUI, Hang Wai James	Anaesthetic Management of a patient with Somatostatinoma for Resection with a Critical Review of the Literature on this disease
NG, Tse Choi	Using auditory evoked potential (AEP) index to determine the effect of dexmedetomidine on the requirement of sevoflurane in gynaecological operation patients
CHONG, David	Predictors of Short Tracheal Length in Anaesthetized Chinese and Risk of Endobronchial Intubation
LEUNG, Yin Yee	Evaluation of a new laryngoscope Viewmas™ in simulated difficult airway
LAU, YS	A case report and review of tension pneumoperitoneum after cardiopulmonary resuscitation

Professor KF Ng
Formal Project Officer

Board of Examination

Successful candidates

Intermediate Fellowship Examination in Anaesthesiology February/March 2005

CHOW Chee Yuen	KWH
CHUI Sze Wing	YCH
FUNG Yiu Tung	UCH
KONG Hang Sze Amy	KWH
LEUNG Wing Yan	UCH
LI Luk Sing	PYNEH
YUE Man Cheung, Stephen	UCH

Seven out of 16 candidates passed the examination. The Prize of the Intermediate Fellowship Examination was awarded to Dr Amy KONG

The College is grateful to Dr J-P van Besouw of RCA, and Professor Duncan Blake of ANZCA for their assistance as External Examiners during the examination.

Examination Dates, 2005

Intermediate Fellowship Examinations 2005
Examination Fee: $6,500

June / August	Date
Written	24 June 2005 (Fri)
Oral	12-13 August 2005 (Fri-Sat)
Closing Date	24 May 2005 (Wed)

Final Fellowship Examinations in Anaesthesiology 2005
Examination Fee: $10,000

July / August	Date
Written	15 July 2005 (Fri)
Oral/OSCE	2-3 September ± 4 September 2005 (Fri-Sun)
Closing Date	15 June 2005 (Wed)

Diploma of Pain Management (HKCA) Examinations 2005
Examination Fee: $5,000

July / August	Date
Written	4 November 2005 (Fri)
Closing Date	4 October 2005 (Tue)

Exit Assessment Date for Year 2004
Examination Fee: $5,000 for Fellow *ad eundem*

16 June 2005 (Thur); 14 July 2005 (Thur); 13 October 2005 (Thur)

*Trainees who are qualified to apply for fellowship are recommended to have their respectively applications received at the HKCA office **at least 21 days before** the scheduled Exit Assessment dates, to allow ample time for processing.*

PT Chui
Chairman, Board of Examination

Board of Pain Medicine

Over the last 12 months, the BoPM has had a busy time. Several workshops and SIG meetings were organized by the Board during the course of the year. You may access information of the meetings at the HKCA website for CME purposes. The next Pain SIG meeting will be held in June 2005. You will be informed of the next meeting soon.

Seven candidates were approved by Council for Dip Pain Mgt (HKCA) by examination. They are;

Dr Jacqueline Yap Chooi Mae,	19 August 2004
Dr Lim Huey Sing,	16 February 2005
Dr Tay Teik Guan,	16 February 2005
Dr Aaron Lai Kin Wah,	16 February 2005
Dr Timothy Brake,	16 February 2005
Dr Kwok Fung Kwai,	21 April 2005
Dr Kong Suet Kei,	21 April 2005

The next Diploma of Pain Management examination will be held on 4th November 2005. It is anticipated that an external examiner will again be invited to participate in our examination. During the examiner's visit, several workshop and scientific meetings on pain medicine are being planned for members and fellows of our college as well as for other specialists and healthcare professionals.

The inspection of United Christian Hospital and Queen Elizabeth Hospital for Diploma of Pain (HKCA) training took place in March 2005. The accreditation for training at both hospitals has been renewed for a further five years.

The BoPM is planning to revise the training programme and examination of the Dip Pain Mgt in view of the progressive development of pain medicine in Hong Kong. You will be kept informed of any proposed changes to the current programme.

I would like to take this opportunity to express my sincere appreciation to all BoPM members who have contribute in one way or another, and other fellows who have assisted in organizing the various meetings and education programmes.

PP Chen
Chairman, Board of Pain Medicine

Board of Censor

Admission to Fellowship by Examination, FHKCA

CHEUNG, Chi Wai
LUK, Chi Wing Irene
LAU, Yat Sing
NG, Tse Choi
YIP, Man Alexandra

Admission to Fellowship *ad eundem*, FHKCA

YUEN, Vivian Man Ying
CAVES, Natalie Dawn
LIM, Boon Kian
LUI, Hang Wai
WONG, Chau Ping Joyce

Admission to the Diploma of Pain Management (HKCA) by Examination, Dip Pain Mgt (HKCA)

LIM Huey Sing
TAY Teik Guan
LAI Kin Wah
BRAKE, Timothy
KWOK, Fung Kwai
KONG, Suet Kei

Admission to Fellowship *ad eundem*, FHKCA(IC)

SO, Hui Kei Dominic

New Members

HO, Chi Yu
LEE, Wai Ping
LI, Luk Sing
LI, Yi On Yvonne

Michael Irwin
Chairman, Board of Censor

Administrative Arrangement with HKAM in relation to CME /CPD activities submissions

Subsequent to a number of meetings with the past CME Coordinator, arrangements were made with the Academy in relation to the submission of CME/CPD activities. The aim of the programme is to utilize the MLMS programme of the Academy to enable the fellows of our specialty/subspecialty to have the latest update on the status of his/her CME/CPD progress and to use the **MLMS** as a tools for self improvements or source of information to maintain the standard of our specialty/subspecialty.

1. Starting from 1st January 2005, public/private institutions which carry regularly scheduled CME/CPD activities are to submit the attendance records of individual departments promptly, preferably on a bi-weekly basis. The CME/CPD points will be entered into the MLMS system via the Academy data entry clerks. Also please be reminded that the information on the CME/CPD scheduled should best be publicized as early as possible to allow open participation by all specialists and non-specialists at large. Institutions can make use of the HKCA and HKAM sites to publicize their programmes. Individual hospitals are encouraged to submit the relevant files for onward delivery for processing.

2. Accredited overseas meetings, publications, self-study programmes will still need submission from fellows for individual vetting by the CME/CPD Subcommittee before the CME/CPD points will be forwarded to the Academy for recording in the MLMS system. Non-accredited overseas meetings will in general need to obtain PRIOR approval from the Chairman. You will need to submit the programme for vetting. Also after your attendance, all claimants of overseas meetings need to attach a copy of the attendance certificate as well. Fellows are encouraged to submit the records on the relevant programme as early as possible.

3. Please note that during the 3-year CME/CPD cycle, all non-anaesthetic CME/CPD points will be capped at 15. The CME/CPD activities will be vetted and categorized in broad terms of anaesthesia and non-anaesthesia related activities.

4. Please remember to sign the Attendance Sheet at accredited scientific meetings. The College has 2 card readers which can capture attendance automatically by swiping the Fellowship Card of the Academy. The reader and the programme will be on loan for organizers of individual events on a first-come-first-served basis. It is extremely important for fellows to remind the organizers to return the attendance records to the College for onward delivery to the Academy for recording.

5. All College sponsored or held events like Mock examinations, Intermediate and Final Examinations, tutoring on individual courses or workshops will attract CME/CPD points. At the recommendation of the various event coordinators, CME/CPD points will be forwarded to the Academy automatically for recording.

If you want to learn more about the *MLMS*,…

Please visit www.mlms.org.hk. Or see *HKCA Newsletter* 2004;**13**(3):13 (also available in College website)

CONTINUING MEDICAL EDUCATION PROGRAMME (Revised in August, 2004)

Introduction

1. The Council of the Hong Kong College of Anaesthesiologists has approved the following programme for Continuing Medical Education (CME) and Continuous Professional Development (CPD) of its Fellows and Members. Theses programmes are based on a "Credit Point System" which allocates points for taking part in CME/CPD activities. This system has received the approval of the Hong Kong Academy of Medicine (HKAM) and will also be used for CME/CPD accreditation with the HKAM.
2. For the purpose of this system, CME/CPD activities are classified according to the principles laid down by the Hong Kong Academy of Medicine into the following categories:-
   - 2.1 Active CME
   - 2.2 Receptive CME
   - 2.3 Publications
   - 2.4 Self Study
   - 2.5 *Research*
   - 2.6 *Development of New Technologies or Services*
   - 2.7 *Postgraduate Courses*
   - 2.8 *Development of CME/CPD Materials*
   - 2.9 *Activities for Improvement of Patient Care*
   - 2.10 *Grand Rounds in Training Units*
3. *CME/CPD activities applicable to Fellows apply also to members.*

Objective of CME/CPD

4. *The purpose of CME/CPD is to keep Fellows informed and up-to-date, and to maintain a high standard of professional practice.*
5. <u>*Supervision of CME/CPD*</u>
   - 5.1 *CME/CPD programmes established by the Colleges must be clearly defined and approved by the Education Committee of the Academy. Colleges should make efforts to facilitate and to accommodate the participation from all Fellows.*
   - 5.2 *Any changes to established CME/CPD programmes require the approval of the Education Committee of the Academy.*
   - 5.3 *The Academy should ensure compliance with CME/CPD requirements by imposing sanctions, which may include suspension of Fellowship.*
   - 5.4 *Fellows, residing in Hong Kong or overseas, must fulfill the full requirements of the CME/CPD programme by the end of each cycle. Fellows holding multiple Fellowships under different Colleges must fulfill requirements for each of these Fellowships.*
   - 5.5 *Fellows must respond to call for CME/CPD returns from Academy/College, and submit all returns with required proof within the defined period of time.*
   - 5.6 *Fellows failing to submit return on time will be regarded as CME/CPD non-compliant. Subsequent request to review late submissions may be subject to an administrative fee to be determined by the College.*
   - 5.7 *All notices sent to the address last provided by a Fellow to the Academy/College will be deemed to have been received by that Fellow, and it is the responsibility of a Fellow to update the Academy/College of his contact address whenever it is changed.*
   - 5.8 *The Education Committee of the Academy may recommend to the Council of the Academy the suspension of a Fellow who has failed to comply with CME/CPD requirements by the end of the cycle, unless the Committee is satisfied that there are relevant and exceptional circumstances, and that the shortfall can be remedied within an acceptable time.*

CME Sub-committee

6. The CME Sub-committee is formed under the Education Committee of the College and deals with issues related to CME activities and their accreditation. The Chairman of the Sub-committee shall be a member of the College Education Committee and the Chairman of the Education Committee shall be an ex officio member of the Sub-committee. The Chairman and members of the Sub-committee shall be nominated by the College Education Committee and appointed by College Council. There shall not be less than three and not more than seven members in the Sub-committee, at least two of which shall be members of the College Education Committee. Members of the Sub-committee should include one representative from the Society of Anaesthetists of Hong Kong, and one Fellow from the private sector. This Sub-committee shall be accountable to the College Council through the College Education Committee. The Terms of Reference of the Sub-committee will be determined and

revised from time to time by the College Education Committee and endorsed by College Council.

The Credit Point System

7. In this credit point counting system, credit points are given and accumulated for the various accredited CME activities that Fellows participate in. The basic rules for the system are:-
   7.1 Cycle length of each period of review is determined to be three (3) years.
   7.2 *All CME/CPD cycles will be synchronized with the issue of Practising Certificate. All CME/CPD cycles will be synchronized to start on 1st January 2005 and thereafter 1st January of each three-year cycle. The cycle will start immediately after election to Fellowship of the Hong Kong Academy of Medicine. For fellows who start their cycles on dates other than the synchronized date, the CME/CPD points for the first cycle will be calculated on a* pro-rata basis.
   7.3 A minimum of ninety (90) points have to be accredited over this three-year cycle period, and an average of thirty (30) points per year should be aimed at by Fellows.
   7.4 The basic credit point is one point for each hour of receptive participation in CME activities.
   7.5 Each CME activity claimed can only be accredited credit points under one single CME category.
   7.6 *CME/CPD points accumulated in excess of the requirement for one cycle cannot be carried forward to the next cycle.*
8. CME meetings with prior approval by the College are Formal College Approved Postgraduate Meetings (FCAPM's). CME meetings/activities organized by a Department of Anaesthesiology which is recognized and approved for vocational training by the College will be accepted as FCAPM's.

Active CME

9. This includes activities at which the Fellow plays an active part in the programme and may include the following:-
   9.1 Participation as speaker, chairman, panelist, or presenter in any FCAPM: five (5) points per presentation.
   9.2 Activity as teacher/trainer in formal, non-bedside didactic post-graduate Course organized by the College or Society of Anaesthetists of Hong Kong and other Academy Colleges: three (3) points per hour. Prior approval for CME/CPD should be sought for *Undergraduate teaching and other postgraduate teaching*
   9.3 Participation as examiner of the College Fellowship Examinations (Intermediate or Final): 5 points per section (Written, Oral, OSCE) of the examination.
   9.4 Participation as trainers or trainees in hands-on clinical courses must have prior approval of the CME subcommittee. Number of CME points will be determined for the individual course, subjected to maximum of 10 points per course.
   9.5 Oral presentation of abstracts or papers at any FCAPM attracts five (5) points for the presenter and two (2) points for the other authors.
   9.6 Quality Assurance (QA) Reports require prior approval and assessment of the College CME Sub-committee. QA Reports will be assessed and given credit points to the main and other authors at the discretion of the College CME Sub-committee considering the complexity and extent of the project being undertaken, subject to a maximum of ten (10) points per author. Normally only the first six authors may be credited with Credit Points.

Receptive CME

10. This includes participation of the Fellow in FCAPM's (including talks, lectures, seminars, presentations or *Mortality & Morbidity Meetings*) as a listener.
11. Each hour of passive participation in such activities is credited with one (1) point.
12. All scientific meetings or other receptive programmes, including local and overseas meetings, Refresher Courses, etc., will be vetted and pre-approved for CME accreditation by the College CME Sub-committee. Scientific meetings and courses organized by the College or the Society of Anaesthetists of Hong Kong are considered FCAPM's.

Publications

13. Publications may be papers of clinical and/or academic interest in reputable peer-reviewed journals from time to time accredited by the College CME Sub-committee.
14. Normally only the first six (6) Fellow as authors in any such paper can be credited with Credit Points under this category. The first author of each paper published in an accredited journal is credited with ten (10) points while the minor author(s) are credited with five (5) points.

Self Study

15. Documentation is required for completion of self-study programmes including self-assessment programmes accredited by overseas professional bodies. Such programmes need prior approval and accreditation by the College CME Sub-committee.
16. Such programmes completed and documented are credited with not more than ten (10) points per programme as determined by the College CME Sub-committee.

Postgraduate Courses

17. *Attending a course and subsequently obtaining a post-graduate qualification can be accepted as a form of CME/CPD. Master course that are specific and relevant to Anaesthesia will earn 30 CME points. Diploma course that are specific and relevant to Anaesthesia will earn 15 CME points. Courses that are relevant but not specific to Anaesthesia will earn Non-Anaesthetic CME points*

Development of CME/CPD Materials

18. *Participation in development of CME/CPD materials for self-study or e-learning can be awarded CME/CPD points. 3 points for each set of material.*

Activities for Improvement of Patient Cares

19. *Participation in learning/activities that enhances the ability to practise clinical skills, patient management and cares, e.g. information technology, interpersonal and communication skill training, skills laboratory learning, and virtual reality / simulator learning can be awarded CME/CPD points. Participation in and successful completion of the following course may earn 10 anaesthetic CME points : ACRM, ATLS, ACLS, APLS, EMAC*

Documentation of CME activities

20. Fellows shall submit their accreditation points on the prescribed form to the College CME Sub-committee every twelve months, i.e. in January or July whichever is the anniversary for the Fellow's CME cycle.
21. The CME points accumulated by Fellows will be reviewed annually. Fellows with twenty or more points less than the pro-rated minimum for the period under review will be reminded, i.e. a reminder will be issued if they have earned a total of less than 10 points in the first year and less than 40 points in the first two years of their three year cycle.

Certification of satisfactory CME activity level

22. Fellows who accumulate more than the required minimum credit points are eligible for the issue of a Certificate to certify that they have achieve a satisfactory level of CME activity over the period of review. A fee may be levied for the issue of such a certificate to cover administrative costs and the fee is to be determined by Council from time to time.

Exemptions

23.1 *Retired from Active Practice (Do not apply to members)*

(a) *The Academy will consider application for CME/CPD exemption from a Fellow only if he has formally submitted a written declaration to the Academy/College that he has retired from active practice in and outside Hong Kong.*

(b) *A Fellow holding multiple Fellowships cannot claim retirement from active practice for one specialty while still practising the other specialties. A Fellow can apply for suspension of a Fellowship for which he chooses not to continue with CME/CPD.*

(c) A retired Fellow who subsequently wishes to resume active practice will be required to have obtained the minimum number of accreditable CME/CPD points for one CME/CPD cycle counting back from the date of application in order to resume medical practice. Should a retired Fellow resume medical practice before he can fulfill the CME/CPD requirements as aforementioned, he will lose his status as retired Fellow and his Fellowship will be suspended accordingly.

23.2 *Acute/Prolonged Illness and Permanent Disability*

(a) *A Fellow who falls behind CME/CPD because of acute/prolonged illness or permanent disability can be exempted from the CME/CPD requirements, on condition that he is not in active practice.*

(b) *When a Fellow recovers from prolonged illness and resumes his medical practice, he will be required to re-start his CME/CPD cycle and to obtain at least 40 CME/CPD points in the first year of the cycle.*

Non-compliance

24.1 *Non-compliance That Is Remediable*

(a) *A Fellow must:*
   (i) *has achieved not less than 60 points within the cycle; OR*
   (ii) *be certified to have suffered from a medical condition which Council considers as a reasonable cause for the CME/CPD non-compliance.*
   The Academy may, at its discretion, accept other conditions if supported by the College of the Fellow on reasonable grounds.

(b) *The Fellow must engage in a remedial programme to make up for the deficiency.*

(c) *The reason for non-compliance and the remedial programme must be endorsed by the Education Committee and Academy Council.*

(d) *The remedial programme must be finished within the time specified by the appropriate College. In any case, the remedial programme must be finished within 12 months from the end of the cycle concerned.*

(e) *The next cycle should follow immediately after the previous cycle without any break, i.e. the Fellow will have to undergo normal and remedial CME/CPD at the same time.*

24.2 *Non-compliance That Is Not Remediable*

For Fellows who have obtained less than 60 points within a cycle without acceptable reasons, a recommendation for Fellowship suspension will be made. Reinstatement of Academy Fellowship shall be subject to the conditions stipulated in the Academy policy paper entitled "Reinstatement of Fellowship".

Certification for Specialist Registration

25.1 *The Academy will inform the Medical Council of Hong Kong/Dental Council of Hong Kong, for the purpose of Specialist Registration, if a Fellow has failed to comply with, or been exempted from, the CME/CPD requirements.*

25.2 For remediable non-compliance, the Academy will inform the Medical Council of Hong Kong/Dental Council of Hong Kong if the Fellow cannot complete his remedial by the deadline set by the Academy.

25.3 *If a Fellow who has been exempted from CME/CPD for reasons other than prolonged illness, or whose Fellowship has been suspended due to CME/CPD non-compliance, subsequently wants the Academy to certify him for Specialist Registration, he will be required to have obtained the minimum number of accreditable CME/CPD points for one CME/CPD cycle counting back from the date of application for certification.*

25.4 *If a Fellow who has been suffering from prolonged illness and been exempted from CME/CPD subsequently wants the Academy to certify him for Specialist Registration, he will be required to have obtained at least 40 CME/CPD points in the first year of his resumed cycle.*

25.5 *A Fellow should be certified to have fulfilled the CME/CPD requirements for the purpose of Specialist Registration, as long as he has obtained the required number of points for a cycle.*

(Editor's note: Changes from the previous version are highlighted with italics)

EXPLANATORY NOTES TO THE CONTINUING MEDICAL EDUCATION (CME) PROGRAMME DOCUMENT

Section	Term/Item	Explanation
1	Continuing Medical Education (CME) activities	CME activities shall be at postgraduate post-Fellowship level for the maintenance and improvement of professional standards.
7.3	Minimum CME points in the three-year cycle	There is a minimum requirement of ninety (90) CME points for the three year cycle but no minimum requirement for *annual* CME points. CME points may be accrued from year to year within the same three-year cycle. Points gained over and above the *annual average of 30 CME points* being countable towards the final CME points in that same three-year cycle. Deficits in one year may be made up in a later year within the same three-year cycle period.
8	Formal College Approved Postgraduate Meeting (FCAPM)	• CME activity is only countable for CME points if they have ***prior approval*** of the College as FCAPM activity. • Hospital departments approved for post-graduate training may organize FCAPM's but ***not all components of departmental meetings are suitable for CME accreditation --*** the nature and contents of such meetings will need to be considered. Hospital departments need to indicate the CME accreditable components of their departmental meetings and submit their meeting programmes to the CME Sub-committee according to the relevant Guidelines of the CME Sub-committee. • CME meetings must have at least five participants to be considered for accreditation. • Meetings ***solely*** for the purpose of pre-Fellowship trainee education are not suitable for award of CME points. • CME meetings must be ***well publicized*** and ***open for College vetting.***
9.1	Speaker or presenter at FCAPM's	Normally this means a presenter giving a presentation of one hour in duration at an FCAPM. Five (5) CME points are awarded for each hour of presentation. Speakers/presenters giving less than a one-hour presentation will be considered ***pro rata*** with one CME credit point given for each twelve minutes of presentation.
9.1	Chairman of FCAPM's	The chairman of an FCAPM, other than hospital departmental meetings or equivalent programmes, will be awarded five (5) CME points only when the chairman is contributing by more than just an introduction of the speakers and chairing the post-presentation discussions, e.g. a review of the contents of the presentations of the meeting with relevant commentary on the topic(s).
9.1	Panellist at FCAP's	Panellists are major contributors to an FCAPM, other than hospital departmental meetings or equivalent programmes, involving multiple speakers on a subject and are expected to gain five (5) CME points for every hour of participation "on platform". Participation of less than one hour "on platform" will be accredited *pro rata.*
9.2	Teaching in formal non-bedside didactic post-graduate Courses	Normally only participation in formal courses (refresher or otherwise) organized by the College or Society of Anaesthetists of Hong Kong is acceptable. Participation in courses conducted by other Academy Colleges or organizations may be considered but needs prior approval from the College
9.3	Examiner at College examinations	An examiner may be one (a) setting and marking written questions; (b) participating in oral examinations; (c) ***setting up*** OSCE stations ***and assessing candidates*** in these examinations.
9.5	Presentation of abstracts or papers at FCAPM's	Orally presented abstracts or papers must be the result of research work by the presenter and the other authors to gain CME points under this category. Poster presentation at FCAPM meetings are included under this category.
9.6	Quality Assurance (QA) Reports	QA Reports are papers presenting results of QA activities.
10	Passive (receptive) participation in FCAPM's	The minimum countable duration of receptive participation is half an hour and may attract half a point for each half hour of attendance.
12	Scientific meetings	Scientific meetings which are considered acceptable for CME points are those so indicated by the HK College of Anaesthesiologists and the Society of Anaesthetists of Hong Kong in the publicity material for these meetings. Scientific meetings of other Academy Colleges or organizations need to be approved as FCAPM's under the relevant Guidelines of the CME Sub-committee.
13	Publications	These must be material that has not been previously used to claim for CME accreditation whether in published form, or presented in abstract or poster form (either in writing or orally).
16	Self study programme	A self study programme is a ***structural*** self study activity which may consist of single or multiple components.

Recent Meetings: Anaesthesia, Intensive Care & Pain management

Local meetings 2005

17 May, 2005	**SCIENTIFIC MEETING** ROCURONIUM – ORG25969:An ideal relaxant-reversal combination Speaker: Professor Rajinder Mirakhur Venue: Sheraton Towels & Hotel, TST Contact: Pansy YU; Phone: 852 2833 6380; Email: organon@organon.com.hk
28 June, 2005	**HONG KONG COLLEGE OF ANAESTHESIOLOGISTS, ANNUAL GENERAL MEETING** Venue: Headquarter, Hospital Authority Contact: Administrative Executive, HKCA, Phone: 2871 8833. Fax: 2814 1029, Email: office@hkca.edu.hk
30 July-1 August, 2005	**EMAC COURSE** Venue: The Institute of Clinical Simulation, North District Hospital Contact: Administrative Executive, HKCA, Phone: 2871 8833. Fax: 2814 1029, Email: office@hkca.edu.hk
27-28 August, 2005	**COMBINED SCIENTIFIC MEETING IN ANAESTHESIOLOGY 2005 (Official satellite meeting of the 11th World Congress on Pain)** Theme: "East meets West in Pain Medicine". Venue: Hong Kong Convention Centre. Contact: CSM 2005 Secretariat, c/- International conference Consultants, Ltd, Unit 301, 3/F, The Centre Mark, 299 Queen's Road Central, Hong Kong. Phone: 852 2559 9973; Fax: 852 2547 9528 Email: csm2005@icc.com.hk; Website: www.hkca.edu.hk/csm2005.htm
28 August 2005	**THE SOCIETY OF ANAESTHETISTS OF HONG KONG 50TH ANNIVERSARY DINNER** (Sunday) 18:30 - 21:30 hours Venue: Hong Kong Convention Centre Contact: CSM 2005 Secretariat, c/- International conference Consultants, Ltd, Unit 301, 3/F, The Centre Mark, 299 Queen's Road Central, Hong Kong. Phone: 852 2559 9973; Fax: 852 2547 9528 Email: csm2005@icc.com.hk; Website: www.hkca.edu.hk/csm2005.htm
2-5 September, 2005	**THE CHINESE SOCIETY OF ANAESTHESIOLOGISTS, ANNUAL MEETING** Venue: International Conference Centre of Dong Fang Hotel and China Hotel. Guangzhou. Contact: Email: csa8@china.com
22 October, 2005	**DIFFICULT AND ADVANCED AIRWAY MANAGEMENT WORKSHOP** Venue: The Institute of Clinical Simulation, North District Hospital Contact: Administrative Executive, HKCA, Phone: 2871 8833. Fax: 2814 1029, Email: office@hkca.edu.hk

Overseas Meetings 2005

Tunis, TUNISIA
21-25 May, 2005

3RD ALL AFRICA ANAESTHESIA CONGRESS
Venue: Tunis. Contact: Professor Mohamed Salah Ben Ammar, Chairman of the Congress. Email: contacts@aaac-tunis2005.org Website: www.aaac-tunis2005.org

Vienna, AUSTRIA
27-31 May, 2005

EUROANAESTHESIA 2005
Venue: Austrian Centre Vienna Contact: European Society of Anaesthesiologists, 24 rue des Comiens, Brussels, Brussels 1000 , Belgium. Tel: 11 2743 3290 Fax: 11 2743 3298 Email: secretariat.esa@euronet.be Website: www.euroanesthesia.org

Sydney, AUSTRALIA
10-12 June, 2005

JOINT FACULTY OF INTENSIVE CARE MEDICINE IN ASSOCIATION WITH ANZICS NSW REGIONAL COMMITTEE INAUGURAL ANNUAL SCIENTIFIC MEETING
Theme: "Neurointensive Care: The Road Ahead". Venue: Sofitel Wentworth Sydney. Contact: Carol Cunningham-Browne, Executive Officer, Joint Faculty of Intensive Care Medicine, 630 St Kilda Road, Melbourne VIC 3004. Tel: 03 9510 6299 Fax: 03 9510 6786 Email: jficm@anzca.edu.au

Vancouver, CANADA
17 - 21 June, 2005

61ST ANNUAL MEETING, CANADIAN ANESTHESIOLOGISTS' SOCIETY. Contact: Susan Wilson Meeting Coordinator, Canadian Anesthesiologists' Society, Suite 208, One Eglinton Avenue East Toronto, Ontario M4P 3A1. Tel: 416-480-0602 Fax: 416-480-0320 Email: meetings@cas.ca Website: www.cas.ca

Sydney, AUSTRALIA
21-26 August, 2005

11TH WORLD CONGRESS ON PAIN, INTERNATIONAL ASSOCIATION FOR THE STUDY OF PAIN
Contact: International Association for the Study of Pain, 909 NE 43rd Street, Suite 306, Seattle, WA 98105, USA. Tel: 206 547 6409 Fax: 206 547 1703 Email: IASP@locke.hs.washington.edu

Nelson, NEW ZEALAND
14 - 17 September, 2005

NEW ZEALAND ANAESTHESIA ASM. Theme: "Infection and the Anaesthetist". Venue: Nelson Hospital. Key Speakers: Prof Douglas B Coursin, USA; Prof Michael Murray, USA; Prof Robert Sneyd, UK and A/Prof Michael Davies, Melbourne. Contact: Conferences & Events Ltd, PO Box 1254, Nelson New Zealand. Tel: 64 3 546 6022 Email: allan.grant@nmhs.govt.nz Website: www.confer.co.nz/nzaec2005

Gold Coast AUSTRALIA
24 - 27 September, 2005

64TH NATIONAL SCIENTIFIC CONGRESS OF THE AUSTRALIAN SOCIETY OF ANAESTHETISTS.
Venue: Gold Coast Convention and Exhibition Centre. Contact: Organisers Australia, PO Box 1237, Milton Qld 4064. Tel: 07 3369 7866 Fax: 07 3367 1471 Email: asa2005@orgaus.com.au Website: www.asa2005.org.au

New Orleans, USA
22 - 26 October, 2005

AMERICAN SOCIETY OF ANESTHESIOLOGISTS ANNUAL MEETING.
Venue: New Orleans, Louisiana. Contact: ASCCA, 520 N Northwest Highway, Park Ridge, Il 60068-2573. Tel: 847 825 5586 Fax: 847 825 5658 Email: ASCCA@ASAhq.org

Combined Scientific Meeting in Anaesthesiology 2005

Dear Members and Fellows,

On behalf of the organizing committee of the "Combined Scientific Meeting in Anaesthesiology 2005", I have the pleasure to invite you to participate in this event on 27-28 August, 2005.

Following the hugely successful "Annual Scientific Meeting" last November, this year the event will take place at the same venue at the Hong Kong Convention and Exhibition Centre. The combined meeting has two concurrent themes. The first theme, "***East Meets West in Pain Medicine***", is an official satellite meeting of the "11th World Congress on Pain" in Sydney. It focuses on the Traditional Chinese Pain Medicine and how we can integrate the Chinese and Western approaches to benefit patients suffering from pain. The concurrent theme, "***New Horizons in Anesthesia***", features on different topical area in Anesthesia. Highlights of the symposium will be on "Neuroanesthesia" and "Anesthesia for Organ Transplantation". From the registration brochure, I am sure you appreciate the strong profile of the list of guest faculty from both overseas and local.

The meeting also features a variety of workshops and a refresher CME course. The scientific subcommittee is working hard on them and I am confident that you will find them both educational and practical.

I would like to remind you that two lunch symposiums will be held during both days of the meeting. These sponsored symposiums are complimentary to registrants. As space is limited, please register early with the conference secretariat. A conference dinner for all registrants and invited guests will be held after the HKCA congregation on the 27 August 2005 and pre-registration is also required.

Lastly, do tell your friends, especially from overseas, about this meeting and ask them to come to experience the thrill of Hong Kong and our annual event at the meeting. Registration brochure can be obtained by sending e-mail to our conference secretariat at: csm2005@icc.com.hk. Online registration is also available at website: www.hkca.edu.hk/csm2005htm. The organizing committee is eager to continual improvement to the organization of the meeting and your suggestions is most welcomed to be send to the above e-mail address.

We look forward to seeing you all.

Regards,
Timmy Yuen
Chairman, Organizing Committee CSM 2005

Please note that a lunch meeting has been organized for SOTs during CSM 2005 to discuss the new curriculum. Please contact the College office@hkca.edu.hk for details.

Combined Scientific Meeting in Anaesthesiology 2005

CSM2005

27-28 August 2005

VENUE: Room 301-310, Level 3, Hong Kong Convention and Exhibition Centre
1 Expo Drive, Wanchai, Hong Kong

East Meets West in Pain Medicine

An official satellite meeting of the 11th World Congress on Pain

New Horizons in Anaesthesia

INVITED SPEAKERS

Dr. Pamela Flood
Columbia University, USA

Prof. Yu-guang Huang
Peking Union Medical College Hospital, China

Prof. Ka-kit Hui
University of California, USA

Prof. Peter Kam
University of New South Wales, Australia

Prof. Ping-chung Leung
The Chinese University of Hong Kong, Hong Kong

Dr. Pirjo Manninen
University of Toronto, Canada

Prof. Teik Oh
University of Western Australia, Australia

Prof. Wen-ge Song
Shangdong Provincial Hospital, China

Prof. Edwin Chau-leung Yu
The University of Hong Kong, Hong Kong

Dr. Shi-ping Zhang
Hong Kong Baptist University, Hong Kong

ACADEMIC ACCREDITATIONS

	Refresher CME Course	Anaesthetic Nursing/ Assistant Refresher Course	Workshop on How to Publish a Scientific Paper	Regional Anaesthesia Workshop	Acupuncture Workshop	CSM 2005 27 Aug 2005	CSM 2005 28 Aug 2005
Australian and New Zealand College of Anaesthetists (MOPS Programme, approval number 0503)	---	---	6 CME (Code 700)	6 CME 3QA (Code 700)	---	9 CME (Code 111)	21 CME (Code 111)
College of Physicians	---	---	---	---	---	3 CME	1 CME
College of Surgeons of Hong Kong	---	---	---	---	---	6 CME	6 CME
Hong Kong College of Anaesthesiologists	3 CME	---	3 CME	3 CME	3 CME	6 CME	7 CME
Hong Kong College of Family Physicians (QA Programme)	---	---	---	---	---	4 CME	4 CME
Hong Kong College of Orthopaedic Surgeons	---	---	---	---	---	2 CME	2 CME
Hong Kong College of Psychiatrists (List B)	---	---	---	---	---	6 CME	6 CME
Hong Kong Doctors Union	---	---	---	---	---	5 CME	5 CME
Hospital Authority CNE Programme	---	3 CNE	---	---	---	3 CNE	5.5 CNE
MCHK CME Programme	---	---	---	---	---	5 CME	5 CME
Royal College of Anaesthetists	---	---	---	---	---	5 CPD	5 CPD

Abstract submission deadline: 1 June 2005
Early bird registration deadline: 30 June 2005

CSM 2005 Secretariat
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JOINTLY ORGANIZED BY:

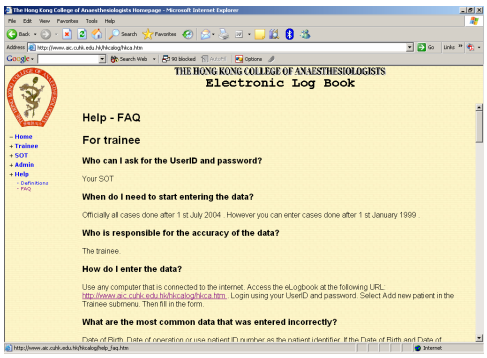
The Hong Kong College of Anaesthesiologists

The Society of Anaesthetists of Hong Kong

Do you know…

In the section on the eLogBook:
A Frequently Asked Questions (FAQ) has been added to the eLogBook software. If trainees or SOTs have problems using the software, they can access the FAQ through the Help submenu.

Drs YF Chow and CH Koo
Board of Education



Panel of Examiners, Intermediate Fellowship Examination, March, 2005
(Left three: Dr J-P van Besouw of RCA, and Left four: Professor Duncan Blake of ANZCA)

Clinical Anaesthesiology Crash Course 2005
We thank all the fellows and colleagues (including those from critical care medicine and radiology) who have contributed in the event.
(Drs Douglas Fok and Eric So – Course organizers)

ERRATUM

In the featured article entitled: "Anesthesia in mainland China: its past and present" published in the December 2004 issue (HKCA Newsletter 2004;14(4):4-10), the legends for the two photographs were misplaced. The legends and photographs should be matched as below. The editors apologize for these errors.

Drs Henry LIU (left) and Shanglong YAO

Dr Qulian GUO (right)

Management of Anaesthetic Crisis (EMAC) course

(Censored by the Australian and New Zealand College of Anaesthetists)

EMAC is a simulator-based course catered to management of anaesthetic crises developed by Australian and New Zealand College of Anaesthetists. It is comprised of 5 half-day modules, namely Human Performance, Cardiovascular Emergencies, Airway, Anaesthetic Emergencies and Trauma. A second course has tentatively set for Saturday, 30th July 2005 to Monday, 1st August 2005.

Venue:	**Institute of Clinical Simulation** **North District Hospital** **9 Po Kin Road, Sheung Shui**
Date:	**30th July to 1st August 2005** **0800hr to 1700 hr on 30th and 31st July, 2005** **0800hr to 1230hr on 1st August, 2005**
CME points:	**HKCA 20 points**
Max participants:	**8**
Fee:	**HK$4,000 per head**
Format:	**Each registrant will participate in:** **(1) Lectures** **(2) Skills stations** **(3) An introduction on the METI Simulator, the anesthetic machine for use in the workshop and the theories of crisis management** **(4) Allocated time for hands-on crisis scenario management on the METI Simulator, rotating through different roles and handling different scenarios**

Trainees starting training program on or after 1st January 2005 are required to complete the EMAC course or its equivalent.

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Esmeron® Abbreviated prescribing information

Therapeutic indications: Esmeron is indicated as an adjunct to general anesthesia to facilitate tracheal intubation during routine and rapid sequence induction, and to provide skeletal muscle relaxation during surgery. Esmeron is also indicated as an adjunct in the intensive care unit (ICU) to facilitate intubation and mechanical ventilation. Contra-indications: Former anaphylactic reactions to rocuronium or to the bromide ion. Special warnings and precautions for use: Since Esmeron causes paralysis of the respiratory muscles, ventilatory support is mandatory for patients treated with this drug until adequate spontaneous respiration is restored. As with all neuromuscular blocking agents, it is important to anticipate intubation difficulties, particulary when used as part of a rapid sequence induction technique. Anaphylactic reactions can occur following the administration of neuromuscular blocking agents. Precautions for treating such reactions should always be taken. Particularly in the case of previous anaphylactic reactions to neuromuscular blocking agents, special precautions should be taken since allergic cross-reactivity to neuromuscular blocking agents has been reported. Dose levels greater than 0.9 mg rocuronium bromide per kg body weight may increase the heart rate; this effect could counteract the bradycardia produced by other anesthetic agents or by vagal stimulation. In general, following long term use of muscle relaxants in the ICU, prolonged paralysis and/or skeletal muscle weakness has been noted. In order to help preclude possible prolongation of neuromuscular block and/or overdosage it is strongly recommended that neuromuscular transmission is monitored throughout the use of muscle relaxants. In addition, patients should receive adequate analgesia and sedation. Furthermore, muscle relaxants should be titrated to effect in the individual patients by or under supervision of experienced clinicians who are familiar with their actions and with appropriate neuromuscular monitoring techniques. Because Esmeron is always used with other agents and because the occurrence of malignant hyperthermia during anesthesia is possible, even in the absence of known triggering agents, clinicians should be familiar with the early signs, confirmatory diagnosis and treatment of malignant hyperthermia prior to the start of any anesthesia. In animal studies, Esmeron was shown not to be a triggering factor for malignant hyperthermia. The following conditions may influence the pharmacokinetics and/or pharmacodynamics of Esmeron; Hepatic and/or biliary tract disease and renal failure. Because rocuronium is excreted in urine and bile, Esmeron should be used with caution in patients with clinically significant hepatic and/or biliary diseases and/or renal failure: In these patient groups, prolongation of action has been observed with doses of 0.6 mg rocuronium bromide per kg body weight. Prolonged circulation time: Conditions associated with prolonged circulation time such as cardiovascular disease, old age and oedematous state resulting in an increased volume of distribution, may contribute to a slower onset of action. Neuromuscular disease. Like other neuromuscular blocking agents, Esmeron should be used with extreme caution in patients with a neuromuscular disease or after poliomyelitis since the response to neuromuscular blocking agents may be considerably altered in these cases. The magnitude and direction of this alteration may vary widely. In patients with myasthenia gravis or with the myasthenic (Eaton-Lambert) syndrome, small doses of Esmeron may have profound effects and Esmeron should be titrated to the response. Hypothermia: In surgery under hypothermic conditions, the neuromuscular blocking effect of Esmeron is increased and the duration prolonged. Obesity: Like other neuromuscular blocking agents, Esmeron may exhibit a prolonged duration and a prolonged spontaneous recovery in obese patients, when the administered doses are calculated on actual body weight. Burns: Patients with burns are known to develop resistance to non-depolarizing neuromuscular blocking agents. It is recommended that the dose is titrated to response. Conditions which my increase the effect of Esmeron: Hypokalaemia (e.g. after severe vomiting, diarrhoea and diuretic therapy), hypermagnesemia, hypocalcemia (after massive transfusions), hypoproteinemia, dehydration, acidosis, hypercapnia, cachexia. Severe electrolyte disturbances, altered blood pH or dehydration should therefore be corrected when possible. For full prescribing information see your local package insert.

References:

1. Chetty M et al: Rocuronium bromide in dental day case anaesthesia-A comparison with atracurium and vecuronium. Anaesth Intens care 1996;24:37-41.
2. J.C. De mey et al: Evaluation of the onset and intubation conditions of rocuronium bromide. European Journal of Anaesthesiology 1994; 37-40.

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May 2005

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