Hong Kong Thoracic Society & ACCP (HK & Macau Chapter)

A Trimonthly joint communiqué of Hong Kong Thoracic Society & American College of Chest Physicians (Hong Kong and Macau Chapter)

Newsletter

Circulation restricted to members only
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2005 - 2007
Editorial
This is a special year for the respiratory community of Hong Kong as the 2006 marks the 20th anniversary of the Hong Kong Thoracic Society and the 10th anniversary of the Hong Kong Lung Foundation. We reported the celebration events which included the Autumn Respiratory Seminar 2006 and Anniversary Dinner in this issue of the Newsletter. An Anniversary Bulletin and Anniversary Memorial video have been specially produced as part of the celebration activities and both of these publications recorded the history of the Hong Kong Thoracic Society and the Hong Kong Lung Foundation. The clinical meetings presented by Queen Elizabeth Hospital and Kowloon Hospital are also reported in this current issue of the Newsletter.

We also have a special article in this issue of the Newsletter to pay tribute to the late Sister Mary Gabriel (MBE, FRCP). Sr. Gabriel contributed tremendously to respiratory service in Hong Kong and you can see the details in the article.

Finally, the practical corner and the medical statistic corner continue to provide interesting and useful knowledge to our readers.

Instruction to Contributors
We welcome contributions from invited guests and members of the Hong Kong Thoracic Society and the American College of Chest Physicians (Hong Kong and Macau Chapter). Articles should be prepared with suitable word processing software (eg Word 2000®). Figures, tables, pictures and photomicrographs should be saved in the same file. Please do not use the auto-indexing features. The file could be sent either by e-mail or by post (on a floppy disc or CD) to the Chief Editor. Please indicate to the Chief Editor if the material has to be returned after the editing process. The article would be printed in the same way as it is submitted. The accuracy of the materials published is the responsibility of the contributors. The contributors must ensure that the materials submitted do not infringe copyright.

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The Autumn Respiratory Seminar (ARS) 2006 was held successfully on September 24, 2006 at the Hong Kong Convention and Exhibition Center. There were over 400 participants registered for this meeting.

The year 2006 marks the 20th anniversary of the Hong Kong Thoracic Society and the 10th anniversary of the Hong Kong Lung Foundation. This year, the ARS began with a special symposium on “The Development of Respiratory Medicine in Hong Kong” to highlight the outstanding achievements made by researchers and clinicians in HK over the last 2 decades in different aspects of Respiratory Medicine. The distinguished panel of speakers included Dr. Christopher Lai (development of asthma), Dr. WW Yew (development of tuberculosis), Prof. WK Lam (development of lung cancer), Prof. Mary Ip (development of sleep-disordered breathing), Dr. KS Chan (development of chronic obstructive pulmonary disease and bronchiectasis) and Dr. CM Chu (on severe acute respiratory syndrome).

The ARS this year also honoured the great contribution to the development of Respiratory Medicine in HK by Dr William Chen, senior respiratory physician, with “Dr William Chen — Young Investigator Award” for the free paper presentation session. There were altogether 6 respiratory trainees or fellows presenting in this session and competing for this award, and the winner was Dr Alvin Tung (PWH). The special symposium on “Critical Care Medicine for Nursing and Allied Health Professionals on Practical Aspects of Respiratory Care” was also very well received.

The Interactive Grand Round included a quiz on the major advances and milestones in respiratory medicine and 2 interesting grey cases were also discussed. Finally, there was a symposium on “the New Developments in Respiratory Medicine in Asia” which included topics on interventional pulmonology, respiratory muscle in patients with chronic obstructive pulmonary disease and community acquired pneumonia.
Professor WK Lam at the Symposium “The Development of Respiratory Medicine in Hong Kong”

Professor Mary Ip at the Symposium “The Development of Respiratory Medicine in Hong Kong”

Dr. KS Chan at the Symposium “The Development of Respiratory Medicine in Hong Kong”

Dr. CM Chu at the Symposium “The Development of Respiratory Medicine in Hong Kong”

Dr. Alvin Tung, winner of the “Dr. William Chen Young Investigator Award”

The panel of judges for the Dr. William Chen Young Investigator Award
Dr. WM Chan speaking at the session “Practical aspects of respiratory care --- new tools for an old trade”

Dr. Kahlin Choo (speaker) and Dr. Arthur Lau (chairman) at the session “Practical aspects of respiratory care --- new tools for an old trade”

Dr. Joseph Pang and Prof. WM Lam chairing the session “Interactive Grand Round”

Dr. Clara Ooi commenting on the radiological findings at the “Interactive Grand Round” session

From left to right: Dr. Clara Ooi, Prof. Pan-chyr Yang, Prof. Paul Reynolds, Prof. Chong-kin Liam, Prof. Yoshinosuke Fukuchi, Prof. Philip Ing, Dr. Joseph Pang and Prof. WK Lam at “The Interactive Grand Round” session.
Group photo at the Autumn Respiratory Seminar 2006
Lung Lesions in Renal Transplant Patients: What can they be?

Dr. HW She and Dr. CK Ng
Department of Medicine, Queen Elizabeth Hospital

Case 1
Madam L is a 58 year old housewife that suffered from end stage renal failure (ESRF) due to chronic glomerulonephritis with haemodialysis in Queen Elizabeth Hospital (QEH) since 2001. She underwent cadaveric renal transplant in mainland China in August 2002 and was put on immunosuppressive treatment that included tacrolimus, prednisolone and azathioprine. She complained of cough and weight loss for 2 months since January 2006. Chest x-ray (CXR) upon admission revealed right lower lobe (RLL) consolidation (Figure 1). Sputum specimens for bacterial culture, cytology, acid-fast bacilli (AFB) staining and culture were all negative. Computed tomography (CT) of thorax revealed RLL consolidation with an area of necrosis. Blood specimens for bacterial cultures, cytomegalovirus antigen (CMV pp65), serum Galactomannan, cryptococcal antigen and Burkholderia pseudomallei IgG/IgM (ELISA) were all negative.

Her symptoms persisted with deteriorations of serial CXRs despite being given broad spectrum antibiotics. Fiberoptic bronchoscopy (FOB) revealed an endobronchial mass protruding from RLL. Histology revealed abundant histiocytes and gram positive coccobacilli. Michaelis-Gutmann bodies (Figure 2) and malakoplakia were detected, features of which were compatible with Rhodococcus infection. Meropenem, azithromycin and levofloxacin were commenced. However, she developed septicaemic shock, multi-organ failure and eventually succumbed despite intensive medical treatment and support.

Figure 1. CXR on admission showing right lower lobe consolidation
Case 2

Mr Y is a 55 year-old man who suffered from systemic lupus erythematosus and diabetic nephropathy, leading to ESRF. He underwent cadaveric renal transplant in China in March 2005 and was put on cyclosporin A, corticosteroids and mycophenolate mofetil afterwards. He complained of fever, breathlessness and developed respiratory failure in August 2005 in mainland. CT thorax revealed multiple cavitatory lesions at the lung apices, which was compatible with aspergillus infection (Figure 3). He was initially treated with amphotericin B, which was stopped due to allergic reactions. Treatment was switched to one of the azoles, that led to favourable clinical response. However, similar symptoms recurred in December 2005 and he was treated with broad spectrum antibiotics and intravenous voriconazole in China. As the subsequent follow-up CT thorax showed mild decrease in size of cavitatory lesions, oral voriconazole was continued.
He attended private nephrologist in Hong Kong in March 2006 for 3rd episode of fever, cough and breathlessness. CT thorax showed increased left cavitatory lesion with thickening of its wall. He was referred to QEH subsequently. Fungal antibodies (aspergillus, histoplasma and coccidioides), serum Galactomannan, and β-D-glucan were all negative. FOB showed no endobronchial lesion and specimens of bronchial aspirate were all negative. CT guided fine needle aspiration of left lung lesion was subsequently performed, but the histological findings were unremarkable. Fever persisted despite broad spectrum antibiotics and anti-fungal treatment. In view of persistent symptoms despite treatment, unresolved radiological abnormalities and uncertain etiological diagnosis, patients were referred to cardiothoracic surgeons. Lobectomy was performed and the histological specimen showed fungal organisms with branching hyphae (Figure 4). Culture failed to growth any fungus. Fever subsided after surgery and oral voriconazole was continued.

![Figure 4. Fungal organism with branching hyphae](image)

**Discussions**

Infections after renal transplantation were common and accounted for 25-30% of deaths in renal transplant recipients in Hong Kong. Pulmonary infection remained the commonest type of infection. Early diagnosis and prompt initiation of appropriate treatment is important. Infection time-line provided good estimation of possible etiological agents. Infections within the first month post-transplant are likely to be surgically related complications. Infections from 2nd to 6th month post-transplant are mostly related to the use of immunosuppressives. In 80% of patients whose immunosuppressive regime can be reduced to a minimally effective dose after 6 months, the risk of infection and possible etiological agents are similar to that of the general population. In the remaining patients with relapsing diseases requiring rescue therapy, the possible etiologies will be similar to patients in 2nd to 6th month post transplant. The most common etiological agents identified in Chinese population were bacterial, tuberculosis and polymicrobial agents respectively.

Consolidation, peri-bronchovascular abnormalities and nodules are common radiological findings that provide additional clues for possible etiological diagnosis. Useful
microbiological investigations include nasopharyngeal aspirate for virus isolation, sputum for bacterial and mycobacterial smear and cultures, urine antigen tests, and various serological tests for virus, bacteria and fungus. Fiberoptic bronchoscopy with bronchoalveolar lavage and transbronchial biopsy is an useful, though relatively invasive, diagnostic tool if those initial tests fail to yield useful diagnostic clues. Open lung biopsy should be considered as a last resort if all the above diagnostic efforts failed and if the biopsy result is expected to affect subsequent management.

Broad spectrum antibiotics should be commenced empirically while the results of microbiological tests are still pending. Adjustment of the intensity of immunosuppressive regimen is also important to regulate the level of cellular-mediated (T-lymphocyte) deficiency.

_Rhodococcus equi_ is a gram-positive coccobacilli, usually found in water and soil. Pulmonary infections in immunocompromised host commonly affect the upper lobe, occasionally with cavity formation resembling that of tuberculosis. Twenty cases in transplant recipients had been reported in the literature. Diagnosis is usually made from sputum culture, blood culture, bronchoalveolar lavage and lung biopsy. No standard recommendation for treatment is available but systemic combination antibiotics followed by prolonged oral maintenance treatment are advocated to reduce relapse rate. Surgery intervention can be considered for abscess and persistent lesions despite antibiotic treatment.

Aspergillus infection is closely related to defects in cellular mediated immunity and clinical manifestations range from colonization, local infection, systemic infection to hypersensitivity reactions. In immunocompromised host, aspergillus infection can manifest radiologically as nodules, pleural based, wedge shaped consolidations or cavities. CT is more sensitive in detecting early radiological changes and specific signs (like crescent and halo signs) suggestive of angio-invasion. Serum (1→3) β-D-glucan is a non-specific fungal marker for tissue invasion and Galactomannan is more specific for tissue invasion in Aspergillus. Fiberoptic bronchoscopy with bronchoaveolar lavage and transbronchial biopsy is an useful diagnostic tool in immunocompromised patients. Open lung biopsy is the last resort for making a diagnosis of invasive aspergillosis. Amphotericin B is the conventional anti-fungal treatment for invasive aspergillosis. Voriconazole had been recently advocated to be more effective than amphotericin B. However, there are potentially severe drug interactions with immunosuppressants commonly used in transplant patients. Caspofungin can be considered as rescue therapy for failure cases. Surgery is rarely considered unless the disease is localized and fails to respond to anti-fungal agents.

References:
Case History

The patient was a 66 year old housewife, non-smoker, with history of carcinoma of left breast with left radical mastectomy done in 1996. She presented in June 2005 with one-month history of cough and whitish sputum. Physical examination and chest X ray were normal. Sputum cytology revealed cells suspicious of adenocarcinoma twice. Sputum for AFB by direct smear method was negative. The FEV1 was 1.6L which was 88% predicted of normal value. The FEV1/FVC ratio was 73%. Fiberoptic bronchoscopy was done and showed mild mucosal swelling over bronchus of apical segment of left lower lobe. Bronchial aspirate for cytology and AFB by direct smear method were both negative. Bronchial biopsy of the mucosal swelling showed no evidence of malignancy. CT thorax also showed no lung opacity.

The patient was referred to Queen Mary Hospital and autofluorescence video-bronchoscopy was done in August 2005. Abnormal mucosal lesions were found at right main bronchus lateral wall just distal to level of carina, left main bronchus at the level of bifurcation to left upper lobe and left lower lobe and left upper lobe bronchus. Bronchoalveolar lavage fluid showed atypical cells. Multiple biopsies of the abnormal sites showed no malignancy.

The patient was then referred to Clinical Oncology Unit of Queen Elizabeth Hospital at September 2005. The diagnosis was probable early lung cancer with mucosal lesion, without gross tumour. Since the lesions were not operable due to involvement of bilateral main airways, intraluminal brachytherapy was offered. The patient admitted again for increased shortness of breath three months after brachytherapy. Chest X ray was normal.
Spirometry showed obstructive pattern with FEV₁ decreased by 50%. Flexible bronchoscopy was done and found lower trachea and carina swollen and covered with whitish materials. The left main bronchus and right lower lobe bronchus were narrowed by mucosal swelling and covered with whitish materials. Bronchial aspirate for cancer cell and AFB by direct smear method were again both negative. Bronchial biopsy of left main bronchus showed fibrinoid material with scanty atypical cells only. The diagnosis of irradiation bronchitis was made after discussion with the oncologist in the Queen Elizabeth Hospital. Despite intravenous hydrocortisone 100mg Q6h, patient deteriorated with SaO₂ 90% on 100% oxygen via non-rebreathing mask. CXR showed partial collapse of the right upper and lower lobes. Rigid bronchoscopy was done and found stenosis of both left and right bronchi. Both main bronchi were dilated. Stenting was done for the left main bronchus as well.
Discussions

**Endobronchial brachytherapy**

Brachytherapy is for palliation of inoperable carcinoma of the lung with endobronchial symptoms. The term "brachytherapy" is derived from the Greek word *brachy*, meaning short, and refers to the short distance, under 1 cm, between the radioactive source and the tumor volume to be irradiated. The radiation is therefore deposited where it is most required and is restricted to a short distance due to rapid falloff.\(^1,2\) This permits effective treatment of endobronchial disease while at the same time bypassing the obstacle imposed by the radiation tolerance of surrounding normal tissue. The development of a high-dose-rate remote afterloading system has led to a breakthrough in this technique.\(^3\) It eliminates the radiation exposure hazard associated with the handling of radioactive sources. It does this by loading, or inserting, the radioactive material into catheters at a separate or remote location. Therefore, a highly radioactive source can be utilized. This permits a higher dose of irradiation to be delivered to the tumor volume in a shorter period of time. The brevity of the treatment (about 20 mins) is vital, since patient tolerance of an endobronchial catheter can be a limiting factor. Patients can now be treated on an outpatient basis at a tremendous cost savings.

Radiation bronchitis and stenosis may occur days or weeks after therapy and can manifest with cough or wheezing. Risk factors include large cell carcinoma histology, use of brachytherapy for curative intent, prior laser resection, and concurrent external beam radiation.\(^5\) Massive hemoptyis and bronchial necrosis or fistula formation are other serious late complications. It happens in 0 to 42% of patient according to different reports.\(^5,7\)

**Radiation bronchitis and stenosis**

Radiation bronchitis and stenosis was defined as a spectrum of clinical changes which occurred in the tracheobronchial tree following radiation.\(^8\) It usually develops 4 to 8 weeks after the last brachytherapy treatment. The incidence of radiation bronchitis ranges from 0% to 4%.\(^8,9\) Radiation bronchitis and stenosis is graded from grade 1 to grade 4.\(^10\) Grade I changes consisted of a mild mucosal inflammatory response with swelling, and characterized by a thin, whitish, circumferential membrane. The membrane did not have to be complete and occurred within the area of prior intraluminal radiation. There was no significant luminal obstruction caused by the membrane as evidenced by obstructive problems or by cough. Grade 2 changes consisted of an increase in the white fibrinous membrane with greater exudation causing symptoms such as cough and/or obstructive problems. Grade 3 was characterized by a severe inflammatory response with a marked membranous exudate. The associated fibrotic reaction was mild. The final progression was to a grade 4 level which was differentiated by the greater degree of fibrosis with resulting circumferential stenosis leading to a decrease in luminal diameter.

In the earlier grade lesions, histopathological changes consisted of a mild mucosal inflammatory response with swelling that contained an amorphous fibrinous and eosinophilic debris with varying amounts of entrapped white cells. Necrotic tumor cells and granulation tissues were also identified. The later grade responses were characterized by an increase in inflammatory changes with chronic inflammation and increasing fibrosis. A grade 4 reaction was characterized by a predominant fibrotic reaction seen in the deeper portions of the biopsy.

The treatment is observation for grade 1 reactions. For grade 2 reactions treatment is divided up into medical and procedurally related treatments. Medical treatment has consisted of steroid for 2 to 3 weeks and narcotic cough suppressants. Procedurally related treatment would consist of a single debridement. Grade 3 and 4 reactions required more aggressive therapeutic intervention. A grade 3 reaction was treated by multiple debridements via the bronchoscope. The most difficult reaction to control was the grade 4 reaction. Intervention required debridement, balloon or bougie dilatation, and stent placement. While the stents can be removed, it is not mandatory to do so since the stents can remain in place for long periods of time.
Reference:
The **Anniversary dinner** to celebrate the 20th anniversary of the Hong Kong Thoracic Society and the 10th anniversary of the Hong Kong Lung Foundation was successfully held on September 23, 2006 (Saturday) at the Hong Kong Club.

The anniversary dinner was attended by the past and present presidents and council members of Hong Kong Thoracic Society, American College of Chest Physician (Hong Kong & Macau Chapter) and Hong Kong Lung Foundation. The occasion was graced by representatives from different professional societies like the Asian Pacific Society of Respiratory, Malaysian Thoracic Society, Singapore Thoracic Society, Taiwan Society of Pulmonary and Critical Care, the Hong Kong Tuberculosis, Chest and Heart Disease Associations, the Federation of Medical Societies of Hong Kong and the Hong Kong Asthma Society. Close partners from pharmaceutical companies also showed their support and attended this special gala dinner.

The dinner started with the welcome speech by Dr. Thomas Mok (current President of the Hong Kong Thoracic Society). This was followed by the presentation of the “History of Respiratory Societies in Hong Kong” by Prof. W.K. Lam (the Founding Chairman of the Hong Kong Lung Foundation). Afterwards, Prof. Yoshinosuke Fukuchi (President of the Asian Pacific Society of Respiratology) gave a warm congratulatory speech. Near the end of the dinner, a special video documenting the history and achievements of the Hong Kong Thoracic Society and the Hong Kong Lung Foundation was played. The dinner party was wrapped up after Dr. Loretta Yam (current Chairman of the Hong Kong Lung Foundation) gave her vote of thanks. The evening was most enjoyable and memorable to the hosts and guests alike.

Invitation card of the Anniversary dinner
Invitation card of the Anniversary dinner

The Anniversary Dinner was held in the Hong Kong Club
Dr. Jane Chan, the Master of Ceremony

Dr. Thomas Mok, President of the Hong Kong Thoracic Society, delivering the welcome speech

Professor WK Lam, Founding Chairman of the Hong Kong Lung Foundation, speaking on the “History of Respiratory Societies in Hong Kong”

Professor Yoshinosuke Fukuchi, President of the Asian Pacific Society of Respirology, delivering the congratulatory message

Toasting --- Past and Present Presidents of the Hong Kong Thoracic Society and the Hong Kong Lung Foundation
Dr. Loretta Yam, Chairman of the Hong Kong Lung Foundation, delivering the vote of thanks

From left to right: Dr. HS Chan, Dr. Thomas Mok, Dr. KS Chan, Dr. James Ho and Dr. CY Tam at the Anniversary Dinner

From left to right: Dr. SL Chan (Founding president of the Hong Kong Thoracic Society), Dr. CK Liam (President of the Malaysian Thoracic Society), Prof. Yoshinosuke Fukuchi (President of Asian Pacific Society of Respirology), Dr. Loretta Yam, Dr. Thomas Mok, Prof. WK Lam, Prof. Yuan-ming Luo (Representative of the Chinese Thoracic Society), Prof. Paul Reynolds (Representative of Thoracic Society of Australia and New Zealand), Prof. Pan-chyr Yang (Taiwan Society of Pulmonary and Critical Care) at the Anniversary Dinner
A special meeting with the title “Scientific Update on the Treatment of Asthma and COPD” was held on July 20, 2006 at the Sheraton Hotel in Hong Kong. This meeting was organized by the Hong Kong Thoracic Society and the American College of Chest Physicians (Hong Kong and Macau Chapter). Professor Peter Barnes, the Professor of Thoracic Medicine, National Heart and Lung Institute and Head of Respiratory Medicine, Imperial College of the United Kingdom had given an enlightening talk on the newest approach to treatment of both asthma and COPD.

Prof Barnes’ talk was very well received with enthusiastic participation from members during the discussion time.
The “Anniversary Bulletin --- 2006” is a special publication for celebrating the 20th anniversary of the Hong Kong Thoracic Society and also the 10th Anniversary of the Hong Kong Lung Foundation. In the Anniversary Bulletin, the development and major milestones of the Hong Kong Thoracic Society and the Hong Kong Lung Foundation are documented.
The rich content of the Anniversary Bulletin includes the history of the Hong Kong Thoracic Society and the Hong Kong Lung Foundation, the list of presidents and publications of the Hong Kong Thoracic Society and the Hong Kong Lung Foundation. In addition, the international conferences, local scientific conferences and press conferences organized by the Hong Kong Thoracic Society and the Hong Kong Lung Foundation are also recorded. Members of the Hong Kong Thoracic Society, the Hong Kong Lung Foundation, as well as those from other professional bodies like the American College of Chest Physicians (Hong Kong and Macau Chapter) and the Hong Kong Tuberculosis, Chest and Heart Diseases Association have contributed the precious historic photos and important information to make the publication of this Anniversary Bulletin possible.
Anniversary Memorial Video

Dr. Alice SS Ho, Dr. Kahlin Choo, Dr. Wilson Yee and Dr. Maureen Wong
Editors of the Memorial CD

The Anniversary Memorial Video has been specially produced for the celebration of the 20th anniversary of the Hong Kong Thoracic Society (HKTS) and the 10th anniversary of the Hong Kong Lung Foundation (HKLF). It was first shown in the Gala dinner of the anniversary celebration of the HKTS and HKLF on September 23, 2006 at the Hong Kong Club.

The Anniversary Memorial Video has recorded the history of the HKTS and HKLF. In the video, Dr. SL Chan (Founding president of the HKTS), Professor WK Lam (Founding president of the HKLF), Dr. Thomas Mok (Present president of the HKTS) and Dr. Loretta Yam (Present president of the HKLF) have introduced the history and development of the two chest societies of Hong Kong. The video has also recorded a lot of historic pictures and by itself will become part of the history of HKTS and HKLF.
Anniversary Celebration of the Hong Kong Thoracic Society and the Hong Kong Lung Foundation

Dr. Thomas Mok¹ and Dr. Loretta Yam²
1. Chairman of the Hong Kong Thoracic Society
2. Chairman of the Hong Kong Lung Foundation

This is a special year for the respiratory community of Hong Kong. The year 2006 marks the 20th anniversary of the Hong Kong Thoracic Society and the 10th anniversary of the Hong Kong Lung Foundation.

Apart from the Anniversary Celebration dinner and the Autumn Respiratory Seminar both of which were successfully held in September 2006, we have also published an Anniversary Bulletin and produced a memorial video which recorded the history and the development of the Hong Kong Thoracic Society and the Hong Kong Lung Foundation.

More events are coming up to celebrate our birth year:
1. A walkathon will be held on November 5, 2006
2. A series of radio talks to promote public education in respiratory health and diseases

Let’s celebrate and make 2006 a most memorable year for everyone of us.
Sister M. Gabriel O’Mahony

Drs Thomas Mok¹, Loretta Yam², PC Wong³

1. Chairman of the Hong Kong Thoracic Society
2. Chairman of the Hong Kong Lung Foundation
3. Chairman of the American College of Chest Physicians (HK & Macau Chapter)

The late Sister Mary Gabriel, MBE, FRCP, was a senior physician at the Ruttonjee Sanatorium from 1950 to 1988, and, together with Sister Mary Aquinas (Medical Superintendent at the Ruttonjee Sanatorium from 1950 to 1985), contributed tremendously to the control, medical care and research of tuberculosis in Hong Kong in those difficult years. From 1988 onwards, Sister Gabriel dedicated herself to the Society for the Promotion of Hospice Care as well as the Bradbury Hospice which was opened in 1992. In recognition of her significant contribution to chest medicine and the Society since its establishment, Sister Gabriel was conferred the first Life Honorary Membership of HKTS at the 5th Council Meeting (1990 to 1991) on 29 November 1990.

Sister Gabriel passed away peacefully at St. Vincent’s Hospital in Dublin, Ireland on 25 August 2006. Her unparalleled contribution to respiratory service in Hong Kong will always be remembered.
This is the condolence message that the Hong Kong Thoracic Society, American College of Chest Physicians (Hong Kong and Macau Chapter) and Hong Kong Lung Foundation has sent to the Columban Sisters:

Letter to Sr. Greaney dated August 30, 2006

Dear Sr. Greaney,

The respiratory community of Hong Kong is extremely saddened and shocked to learn of the passing of Sister Gabriel who was a pioneer tuberculosis worker and contributed tremendously to the control, medical care and research of the disease which was rampant in Hong Kong in 50s to 70s. Her generosity and dedication went a long way to relieve the sufferings of these poor patients.

Sr. Gabriel was the founding Council member of Hong Kong Thoracic Society when it was established in 1986. To honor her contribution she was awarded honorary life membership of the Society in 1991. Her support and kindness to the Society is overwhelming; we received Sr. Gabriel’s congratulatory message for the 20th anniversary of the Hong Kong Thoracic Society just weeks ago, a time when she must have been ill.

We shall all miss Sr. Gabriel dearly. Her warm personality and great contributions will always be remembered. We shall continue her mission of giving the best care to patients with tuberculosis, other respiratory diseases, and cancers. Our most sincere condolences go to members and friends of her bereaved family and Columban Sisters and we pray to give them the courage and fortitude to bear this irreplaceable loss.

Hong Kong Lung Foundation
Hong Kong Thoracic Society
American College of Chest Physicians (Hong Kong & Macau Chapter)

The Memorial Mass for Sr. Gabriel was held in the Wah Yan College Chapel on September 29, 2006. It was a solemn event to pay tribute and celebrate the life of Sister Gabriel. Representatives from the three chest societies, i.e. the Hong Kong Thoracic Society, American College of Chest Physicians (Hong Kong & Macau Chapter) and the Hong Kong Lung Foundation attended the mass.
This section serves to bombard the trainees with questions covering the basic concepts in respiratory medicine. Questions asked will be discussed in the next issue. Specialists and trainers are invited to give their brief discussions. In no way is it meant to be exhaustive or comprehensive, it only serves to highlight important concepts. Specialists are welcome to offer questions (and the discussions) for this section. Trainees are also welcome to give comments, particularly when there is query on what had been published. Please send them to the editor email: fannyko@cuhk.edu.hk

Questions for the next issue:

1. **How to calculate the doubling time of a solitary pulmonary nodule?**
   (from Dr. Ricky WK Lam, Northern District Hospital)

2. **Is intrapleural thromolytic therapy useful in the treatment of parapneumonic effusion or empyema?**
   (from Dr. CY Chan, Pamela Youde Nethersole Eastern Hospital)

3. **What is the role of a pharmacist in the care of asthma patients who need to use spacer device?**
   (from Mr YW So, Queen Mary Hospital)
Practical Corner

What are the clinical applications of proportional assist ventilation?

Dr. Wing-ching Wong
Department of Medicine and Geriatrics, Kwong Wah Hospital

Proportional assist ventilation (PAV) is a relatively new mode of ventilator-based, inspiratory support designed to assist spontaneous breathing in patients with intact neural drive. It was invented by M. Younes in the North America in 1992.\(^1,2\) It has been under experimental and clinical investigation since then. It is a form of synchronized partial ventilatory assistance with peculiar characteristic that ventilator generates pressure in proportion to patient’s instantaneous effort. The more the patient pulls, the more pressure the machine generates. Thus, the ventilator amplifies the patient’s inspiratory effort without any pre-selected target volume or pressure – an analogy to that of power steering in a motor car. It allows the patients to attain whatever ventilator and breathing pattern seems to fit the ventilatory control system and different clinical conditions. It is regarded as an “additional respiratory muscle” which takes over certain proportion of ventilatory workload, under the complete control of the patient’s ventilatory drive. That is to say, unlike all other forms of assisted ventilation (e.g. volume controlled, pressure controlled), there is no target flow, volume, or airway pressure and the responsibility of guiding the ventilatory pattern is shifted completely from clinicians to patients, with the purpose of improving the patient-ventilator interaction.

PAV works based on the equation of motion which states that the pressure applied by the respiratory muscle (Pmus) to the system is to overcome the elastic (elastance, E) and resistive (resistance, R) opposing forces. Elastance is proportional to the volume (V) displacement whereas resistance to the airflow rate (V') neglecting inertia:

\[
P_{\text{mus}} = E \times V + R \times V'
\]

It provides ventilatory assistance in terms of flow assist (FA, cmH2O/L/s) and volume assist (VA, cmH2O/L), which can specifically unload the resistive and elastic burdens respectively. In clinical practice, both FA and VA are usually applied at the same time for effective ventilatory support. The pressure applied to inflate the respiratory system is a result of combination of patients inspiratory effort and the positive pressure applied by the ventilator to the airway opening, depending on the levels of FA and VA set by the clinician:

\[
P_{\text{mus}} = V \times (E - VA) + V' \times (R - FA)
\]

Practically, PAV is intended for use in spontaneously breathing patients with ideal body weight > 25kg, with either endotracheal or tracheostomy tubes of internal diameter 6-10mm.\(^3\) Patients must also have satisfactory neural-ventilatory coupling, and stable, sustainable inspiratory drive (i.e., otherwise, no patient’s inspiratory effort = no volume/flow support from PAV ventilator).

PAV is intended for invasive positive pressure ventilation (IPPV) use, its application in non-invasive positive pressure ventilation (NIPPV) has also been examined. As for any other positive feedback regulation system, one major inherited problem in its NIPPV use is volume/flow over-assistance/over-ventilation called “runaway phenomenon”, which occurs when pressure provided at the end of inspiration exceeds opposing elastic and resistive pressures of the patient. It is especially when there is moderate interface leak for which ventilator
cannot distinguish air flow to patient or to interface (leak). Continuation of positive pressure after the end of patient’s inspiratory effort into the neural expiration results in patient-ventilator asynchrony and discomfort. Other conditions that predispose runaway include 1) errors in estimation of elastance and/or resistance (machine measurement error), 2) inappropriate high setting of FA or VA (clinician error) and 3) improvement in E / R properties of respiratory system (i.e. improved respiratory mechanics after effective therapy in obstructive airway diseases).

Nevertheless, runaway is a rather benign condition. It can be aborted by expiratory effort (or even natural stiffening of respiratory system near total lung capacity [TLC]) of the patients or purposefully by safety alarms of the ventilator machine which limit excessive airway pressure/delivered tidal volume/inspiratory time.

**Pressure support ventilation (PSV) vs PAV**

Over the past decades, PSV has become popular and widely applied, not only because of its simplicity in theoretical background and clinical application but also its favourable clinical outcomes. Studies have shown that PAV allowed a greater variability in TV which correlates with breathing comfort than PSV in face of increased/altering ventilatory demand.\(^4\),\(^5\)

Winck suggested that non-invasive PAV (nPAV) was equally well tolerated, equally effective in reducing daytime hypercapnia and improving nocturnal saturation and symptoms as compared with nPSV. PAV was associated with less oral/nasal dryness hence long-term compliance but more ventilator alarm trigger.\(^6\) Despite sophisticated concept of PAV might appear, clinical evidence so far has failed to show its superiority over other conventional modes of mechanical ventilation (PSV in particular) for acute or chronic respiratory insufficiency of various aetiologies.\(^6\),\(^7\)

**PAV in chronic respiratory failure**

PAV at least achieves the main goals of mechanical ventilation, 1) to correct abnormalities in arterial blood gases, 2) to improve alveolar ventilation & lung volume, 3) to unload respiratory muscle and 4) to reduce neuromuscular drive (P0.1), in addition to some clinical benefits over PSV that PAV 1) improves patient-ventilator interaction, 2) lowers airway pressure hence theoretically less risk of barotraumas and less reduction in cardiac output which is regarded a positive for COPD patients.\(^8\),\(^9\)

**PAV in NIPPV**

Short term administration of nasal PAV is equally effective to improve ventilation, blood gas tensions, to unload diaphragm when compared with nasal PSV in stable cystic fibrosis patient with chronic respiratory failure.\(^10\) But greater diaphragm unloading and breathing comfort with nasal PSV than PAV was observed in those with restrictive type of chronic respiratory failure due to neuromuscular/chest wall deformity, although both produced similar improvement in physiological parameters.\(^11\) The differences in respiratory mechanics in either predominantly obstructive or restrictive lung diseases might have governed the apparent different clinical response to PAV. Further randomised control trials are needed to clarify this.

In exercise training program for severe stable COPD patients, positive inspiratory support by PAV is shown to allow higher intensity of training and maximal exercise capacity, and to improve exercise endurance.\(^12\),\(^13\) In a study by Dolmage, the effect of PAV can be substantiated by use of additional CPAP (i.e. PAV + CPAP) to offset intrinsic PEEP in these patients.\(^14\) By allowing higher variability in TV and better respiratory muscle unloading in proportion to respiratory load demand during incremental exercise training as compared with conventional PSV,
all these favourable features highlight PAV use in pulmonary rehabilitation for severe COPD patients.

**Potential diagnostic tool in breathing control**
Since the central control and neuromuscular drive governs the level and pattern of ventilatory assistance, any abnormality in the central control should be revealed by PAV. It might be used as a diagnostic tool for studying the control of breathing in patients with acute or chronic ventilatory failure in human.

**Summary**
Despite evidence of real advantages of PAV over the existing ventilatory modes is still lacking, it can still be considered as a new addition to the repertoire of MV modes, with the theoretical advantage of improving patient-ventilator interaction and breathing comfort. On the other hand, it is by no means easy to apply in clinical practice because a fair estimate of patient’s respiratory system mechanics (elastance/resistance) is a prerequisite. Further data must be gathered to formulate good guidelines for its practical use, especially in NIPPV.

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**Diagram:**

- TV (Insp Flow)
- Pmus
- PSV
- VCV
- PAV

Disease (unsupported)

- Normal

**Neuroventilatory coupling of various modes of assisted ventilation**
References:
What is the potential role and diagnostic utility of medical thoracoscopy?

Dr. Wai-lam Law  
Department of Medicine, Queen Elizabeth Hospital

Medical thoracoscopy or pleuroscopy, which was invented by Jacobaeus in 1910 for collapse therapy of tuberculosis, has been shown to be a safe and increasingly procedure in practice of respiratory medicine. This can be performed in an endoscopy suite using local anaesthesia and conscious intravenous sedation. Only one or two ports of entry are required and the equipment involved, including video camera facilities, is relatively simple and unsophisticated. It provides a “window” to the pleural space, through which one can directly visualize and obtains biopsy from the parietal surface. The primary use is to diagnose pleural diseases but it also allows therapeutic interventions such as evacuation of pleural fluid and pleurodesis to be performed in cases who would otherwise be unfit for general anaesthesia.

Pleural effusions of unknown etiology
Pleural fluid cellularity, appearance, and biochemistry, along with the clinical presentation, can be used to establish a presumptive or definitive diagnosis in about 75% of patients with pleural effusions. Closed-needle biopsy of pleura was noted to have a diagnostic yield of 75% for pleural tuberculosis and only 57% for pleural carcinoma. Studies describing the diagnostic yield of medical thoracoscopy consistently show an improvement in the yield compared to thoracentesis and closed pleural biopsy. Loddencamper et al. prospectively compared the yield of pleural fluid analysis and closed pleural biopsy with thoracoscopy in 100 patients. Of the 67 patients with either tuberculous effusions or malignant pleural effusions, the yield for pleuroscopy was 96% versus 73% for pleural fluid analysis and closed pleural biopsy. Boutin et al. found a sensitivity of 87.3% in the diagnosis of 150 malignant pleural effusions compared to 23% for pleural fluid cytology and 40% for closed pleural biopsy. Many other studies revealed diagnostic yields of 80-96% for exudative pleural effusions of unknown etiology, and therefore support the use of medical thoracoscopy in evaluating pleural effusions that remain undiagnosed after thoracentesis and closed pleural biopsy.

Malignant pleural effusions (MPE)
Malignant diseases involving pleura is another leading cause of exudative pleural effusions other than effusions of infective origin. It also represents the leading diagnostic indication for medical thoracoscopy. The yield for diagnosing MPE ranged from 80-96% in reported series. In 85% of patients with MPEs, thoracoscopy revealed morphological features suggestive of malignancy, including nodules, polypoid lesions, localized masses, thickened pleural surface, and poorly vascularized pachypleuritis.

Malignant mesothelioma
Pathologists might occasionally find it difficult to make a definitive diagnosis of malignant mesothelioma without having large samples of biopsies. By permitting direct visualization of lesions, pleuroscopy facilitates the choice of biopsy sites.
and allows accurate assessment of the degree of involvement of the diaphragmatic, parietal, visceral and mediastinal pleura.\textsuperscript{14} Boutin reported a sensitivity of thorascopic biopsy of 98\% for the diagnosis of malignant mesothelioma compared with 28\% for pleural fluid cytology, 24\% for closed pleural biopsy and 100\% for surgical biopsy.\textsuperscript{15}

**Tuberculous pleural effusions**

Since tuberculous pleural effusions can be diagnosed in 70-90\% of cases with pleural fluid analysis and closed pleural biopsy,\textsuperscript{5} medical thoracoscopy is usually not necessary to establish the diagnosis. Indeed, Boutin reported that in their experience thorascopy played no significant role in the diagnosis of this disease, but he nonetheless described the endoscopic appearance as a grayish white thickening of the whole parietal and diaphragmatic pleura, particularly along the costovertebral gutter.\textsuperscript{13}

**As a therapeutic tool**

Apart from the diagnostic use, medical thoracoscopy had also been used as a therapeutic tool in chemical pleurodesis for malignant pleural effusion\textsuperscript{16} and spontaneous pneumothorax\textsuperscript{17}, performing drainage and lysis of loculations in pleural infections.\textsuperscript{18} However, abundant clinical evidence are still lacking before medical thoracoscopy can be routinely applied into these areas. With the invention of semi-rigid thorascopes, which is similar in design and manipulation to the current flexible bronchoscopes, the utilization of medical thoracoscopy might continue to obtain increasing popularity amongst respiratory physicians, both as a diagnostic and therapeutic tool.

**References:**

How is bone scan compared with PDG–PET in the evaluation of bony metastases in lung cancer?

Dr. Matthew Wong
University Department of Medicine, Queen Mary Hospital

The median survival period for patients with metastatic non-small cell lung cancer (NSCLC) ranges from 4 to 8 months. Therefore, detection of distant metastases is imperative in order to spare the patients from futile surgery and also for prevention of pathological fracture. According to the American Thoracic Society (ATS) and the European Respiratory Society (ERS), asymptomatic lung cancer patients do not require bone scans (BS) which is based on the postulation that most of the skeletal metastases are symptomatic; BS has lower specificity; and the incidence of osseous metastases in early tumour staging is low. Here, we should bear in mind that all relevant studies related to BS were published between 1977 and 1991 and significant advancement in gamma camera technology used in BS and novel development of sensitive measures such as MRI and PET have been developed since then. Surgical resection offers the highest probability of cure in patients with lung cancer; and yet the 5-year survival rate is about 20% mainly because of presurgical understaging. However, about 10 per cent of surgically-treated patients do have recurrence of malignant disease in skeletal structures. This observation did enlighten some prospective studies showing that sensitivity of BS would be decreased from 87% to 19-39% if it was only performed in symptomatic patients. This discrepancy can be partially explained by the variability of subjective perception of pain by the patients as well as the examiners. In fact, up to 40% of patients with proven bone metastases are asymptomatic.

The conventional radioisotope BS using technetium 99m methylene diphosphonate-based agents (Tc-99m MDP) have been introduced for over 30 years. The exact mechanism of their uptake is not fully understood but is thought to relate to local blood flow and osteoblastic activity rather than the detection of the tumour itself. Although the sensitivity of this method has been reported to be fairly high (i.e. 62-89%), this may be exaggerated by false cases. False positive cases can be explained by area of increased bone mineral turnover such as degenerative change, inflammatory processes, fracture, Paget’s disease etc; whereas false negative findings may be obtained with purely osteolytic lesions, or in patients with slow-growing lesion. Another drawback of BS is its difficulty in monitoring the treatment response and, indeed, if it is performed too early (e.g. in the first few months after successful treatment), the results can be misleading because of flare response.

2-[F-18]-2-fluorodeoxyglucose positron emission tomography (FDG-PET) works because most malignant tumours have increased glucose uptake. Unsuspected distant metastases are detected with PET in 10% of the cases. Sensitivity of PET is around 91%. Unlike BS, PET is not a measurement of mineral bone turnover. In fact, the distinctive increase of glycolysis in malignant cells makes PET a more powerful tool to detect bone metastases. PET, on the other hand, is not so impressive in the detection of osteoblastic when compared with osteolytic metastases since it shows lower sensitivity for sclerotic bone metastases, especially in breast and prostate cancer. Another important application of PET is in the monitoring the treatment responsiveness in chemotherapy or irradiation.
Responsiveness to neoadjuvant therapy is an important prognostic indicator after therapy.

Bone scan is sensitive for the detection of advanced skeletal metastases but might be insensitive to early bone marrow infiltration. The latter is a common site for cancer metastasis and is especially relevant in the evaluation of vertebral metastases, which in turn may result in disastrous consequence such as spinal cord compression. Since FDG accumulates in viable, metabolically-active tumour cells rather than reactive bone, PET scan can detect early stage of metastases such as when only the bone marrow is involved; or before a notable bone reaction which enables abnormal accumulation of technetium and detected by BS. As a result, PET can be used for early detection of metastatic foci than BS. More aggressive osseous lesions, on the other hand, can be hypoxic and may have outstripped their blood supply, which as a result can also contribute to reduced BS uptake. In previous different trials, conflicting conclusions have been drawn when comparing the sensitivities of BS and PET. In some studies, PET is more sensitive than the conventional BS and can identify additional lesions mostly in the spines. Traditionally, BS performs best in the axial skeleton, in which PET is more specific but less sensitive. In other trials, it was found that both techniques had similar sensitivity.

Bury reported that in a study of 110 patients with NSCLC, PET was as equally sensitive as BS, but superior in specificity. In addition, PET was suggested to be more likely cost effective, and could be made to replace BS. However, PET has the limitations of too sensitive characteristic and requiring experience to interpret the lesions. Recently, report has been suggesting that fusion PET-CT provides high sensitivity and specificity for the detection of lytic and sclerotic metastases, indicating that PET-CT could potentially be invaluable in clarifying the situations of benign and malignant lesions. Some other important inherent reasons for the superior performance of PET in comparison with BS include: the superior spatial resolution as compared with that provided by conventional gamma cameras used for BS; routine tomographic images with multiplanar capability in which PET has shown more lesions, especially in sternal and vertebral regions; and the detection of the surrounding soft tissues around the osseous structures such as pulmonary, nodal and soft tissue metastasis.

In conclusion, the international guidelines recommend that skeletal exploration should be performed only in patients with bone pain. However, growing evidence has suggested that PET scan or BS may be useful in detecting bone metastases in asymptomatic patients with newly diagnosed lung cancer. PET has a better specificity, but a inconsistent sensitivity for detecting malignant bone metastases when compared with bone scan. Bone scan, however, may be insensitive to early bone marrow neoplastic infiltration such as vertebral metastases. There is general agreement that, currently, the two techniques have a complimentary role if bone metastases are not to be missed. BS is easier to localize lesions in the skeleton, but this is less of an issue with PET-CT which is becoming more readily available. Other malignancy such as prostate and breast should be viewed differently as bony lesions can be presented as mixture of sclerotic and lytic ones.
References:
Medical Biostatistics

Dr. Julie Wang
University Department of Medicine, Queen Mary Hospital

Evaluation of Screening Programmes

Screening for certain important diseases in high risk patients is an important community-base health policy, e.g. screening for cervical cancer using Papanicolaou smear and breast cancer using mammography in women over 40 years of age.

Clinicians are frequently involved in the process of screening, but how much do we know about the evaluation of its effectiveness.

What is screening?

Screening is the application of a test to those who are asymptomatic, for the purpose of early detection of a disease, so as to intervene early and improve overall disease prognosis. This is one form of secondary disease prevention.

A screening test must have good validity, be inexpensive, quick, easy to administer and acceptable to those who will be screened.

A screening program is a multi-step process, which consists not only of a screening test, but also a confirmatory test and subsequently an effective intervention that can cure the disease at its early stage.

The benefit of a community-based screening program cannot be assumed presence unless it has been rigorously examined by good quality studies.

What are the characteristics of diseases appropriate for screening?

Diseases suitable for screening should be those which are serious, and treatment given before symptoms develop should be more beneficial in terms of mortality and morbidity than that given afterwards.

The natural history of disease should also contain a reasonably long and detectable preclinical phase, so as to allow for early disease detection (see figure below).

Besides, the prevalence of detectable preclinical disease should be high among those being screened. To be able to identifying a high risk group as the target population for screening helps to meet these criteria.
Below shown is the natural history of a disease.

Detectable preclinical phase (DPCP) refers to detectable preclinical phase, this is the target period for screening program, which may not be present in all diseases, or may be too short to allow for screening even if it is present.

How to evaluate screening programmes?

There are several important aspects to consider and adjust for while evaluating a screening programme.

1. Validity of screening test

Validity refers to the sensitivity and specificity of the test.

The sensitivity of the test is defined as the ability to identify correctly those who have the disease. Increasing sensitivity of a test will reduce the proportion of false negatives (see the relation in the formula below).

\[
\text{Sensitivity} = \frac{\text{True positive}}{\text{True positive} + \text{False negative}}
\]
The specificity of the test is defined as the ability to identify those who do not have the disease. A highly specific test results in a low proportion of false positives.

\[
\text{Specificity} = \frac{\text{True negative}}{\text{True negative} + \text{False positive}}
\]

2. Reliability of screening test

This refers to the reproducibility of results on the same person under the same condition. Variability arises from biologic variation, measurement instrument repeatability, intra-observer and inter-observer variations.

3. Impact of false positives and false negatives

False positive cases create an extra burden on health care system by increasing expenses on subsequent expensive and invasive investigations, besides, it also induces patients’ anxiety and worry upon being labelled as “positive” cases. Very often, this label may not be removed even the patient is tested negative for subsequent confirmatory test.

Whereas false negative test result could be deleterious to the patient’s health as it misses the chance of curing a potentially lethal disease at its early stage.

There is always a trade off between the sensitivity and specificity of a screening test. Altering the validity of a screening test will result in different proportions of false positive and false negative cases. The decision on the specific validity criteria should be made after careful weighing of the potential deleterious consequences of false positive and false negative conditions associated with the specific disease to be screened.

4. Use of multiple tests

The use of sequential or simultaneous screening tests are often applied to address the problem of the tradeoff between sensitivity and specificity.

Sequential screening tests increases the net specificity of screening process when compared to a single test. It consists of the initial use of a more sensitive, inexpensive and non-invasive screening test, which optimize the identification of true positive cases (also increases false positive cases); and is then followed by a second more specific test on those who are tested positive for the initial one. Therefore, by reducing the proportion of false positive cases, false negatives are increased.

Simultaneous screening tests, however, increases the net sensitivity of screening, because all tests are administered in parallel. Persons are considered positive cases when any one of the test results is positive, or being negative cases when all of the test results are negative. As a consequence, the number of false negative cases are reduced but false positive diagnoses are more likely.
5. Biases that are specifically associated with screening

Volunteer bias
The two groups of people who are more likely to volunteer in a screening program are, firstly, those who are at higher risk for disease development because of special life style, relevant family history or related medical history; or secondly, those who are more health-conscious, lead healthier life style and have better prognosis for the disease.

Selection bias as such can be minimized by randomized controlled trials.

Lead time bias
The earlier in its natural history an ultimately fatal disease is detected, the longer will be the survival from the time of diagnosis (Figure B), even if there is no difference in treatment effect (Figure A). This apparently longer survival is contributed by lead time.

Lead time is the interval between the diagnosis of a disease at screening and the usual time of diagnosis due to development of symptoms (Figure C). The length of lead time varies with the disease, the individual and the screening procedure.

Ways to minimize lead time bias include generating an estimate of the lead time, which could then be taken into account while comparing the survival of screened and unscreened groups. Another strategy is to compare the age-specific death rates in the screened and nonscreened groups, instead of length of survival between the two.
Length time bias
The probability of detecting a disease during its preclinical period is proportional to the length of that period, which is inversely proportional to the rate of disease progression. Hence cases which are more likely to be diagnosed by screening represent those with a longer preclinical period, who are destined for a more favourable prognosis, regardless of treatment.

Cases which have a shorter preclinical period are those with more rapid disease progression and poorer prognosis.

Trials can be modified to control for length time bias by comparing the mortality experience of the groups after repeated screening.

Overdiagnosis bias
Screening may detect disease that would never have become clinically detectable, eg. remains stable or regresses spontaneously. It may also detect disease that would not have contributed to patients’ death.

Such bias would lead to overestimation of survival of screened patients.

6. Beneficial outcomes of those screened
Below are the possible outcomes of a screening program:

- reduction in mortality
- reduction in case-fatality rate
- increase in percent of cases detected at earlier stages
- reduction in complications of disease
- prevention of or reduction in recurrences or metastasis
- improvement of quality of life

7. Study designs appropriate for evaluation of screening

Non-randomised observational studies

Cohort or case control studies of screened and unscreened cases

Case control studies have been gaining more importance in epidemiology in recent decades. Cases are identified, and their history of screening are compared to the
controls (non cases) who are selected from the same population cohort. A odds ratio < 1 can be generated if screening offers a protective effect against the disease.

Evidence regarding the effectiveness of screening for cervical cancer are generated from observational studies.

**Randomised controlled trials**

This is the best method to evaluate screening as it solves the problems related to confounding, various biases and provide strong evidence regarding the effectiveness of screening program.

The randomized controlled trial for efficacy of periodic mammography screening for breast cancer, conducted by Shapiro and colleagues is an important example.

**8. Cost effectiveness**

Cost benefit analysis should take into account of not only the cost of the screening test, but expenses of further diagnostic procedure for true and false positive cases, length of stay in hospital, the cost of complications resulting from subsequent invasive diagnostic procedures, etc. Non-financial costs such as anxiety and emotional distress induced in patients are also accountable loss.

**9. Screening programmes that show no benefit**

There are multiple reasons to explain for the lack of benefit for a screening program:

1. The **natural history of disease** has no detectable preclinical phase or extremely short detectable phase that makes early detection and therefore potentially curative treatment impossible.
2. Lack of effect of **therapeutic intervention** for the disease that is detected early in the preclinical phase.
3. Inadequacy or inefficiency of **medical care** that could be provided for those who are screened positive for the disease, which delay the timely treatment for their potentially curable disease.

**References:**

This book serves as a ready reference for anyone in medicine, nursing, public health or policy making with an interest in TB. The editor, a professor of medicine and director of the Tuberculosis Control Program at the Philadelphia Department of Health, is internationally known for his work in this field.

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## Diary of International Conferences

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## Useful Websites

### Medical Societies

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### Publications

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<td>Clinical meeting by Princess Margaret Hospital and Caritas Medical Center</td>
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<tr>
<td></td>
<td>Venue: Lecture Theatre, Ruttonjee Hospital</td>
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<tr>
<td></td>
<td>Time: 6:30pm</td>
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<tr>
<td>January 18, 2007</td>
<td>Clinical meeting by Department of Health and Northern District Hospital</td>
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<tr>
<td></td>
<td>Venue: Lecture Theatre, Ruttonjee Hospital</td>
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<tr>
<td></td>
<td>Time: 6:30pm</td>
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<tr>
<td>March 11, 2007</td>
<td>Annual Scientific Meeting</td>
</tr>
<tr>
<td></td>
<td>Venue: Hong Kong Convention and Exhibition Center</td>
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</tbody>
</table>
The Official Journal of ACCP is now on-line but is only available

to subscribers (Fellows, members or affiliated members). Trainees

are welcome to join at a very privilege rate (US30 per year). Applications should be directed to ACCP (USA) through their

trainers (who must be a Fellow of the ACCP). Proof and detail of training (tentative period of training) is required. Any query can be directed to the Secretary, ACCP (HK and Macau Chapter) (see page 1). Browsing of information is available on the ACCP website: http://www.chestnet.org/membership/categories.html

Membership News

♦ As of September 24, 2006, there are 7619 Members (203 Ordinary members, 5 Honorary members, 67 Life members and 486 Associate members).

♦ To be eligible for Life membership, 3 years of full membership prior to the application is necessary. Please write to the Honorary Secretary (Dr W M Chan, Intensive Care Unit, Queen Mary Hospital, Pokfulam, Hong Kong) and send with a cheque of HK$2,000. Acceptance will be decided in the Hong Kong Thoracic Society council meeting.

♦ For membership renewal, please fill in the application/renewal form (available at http://www.fmshk.com.hk/hkts/member.htm) and send to Dr Loletta So (address as on the form) with the subscription (HK$100/200 for associate/ordinary members respectively), (cheque payable to HONG KONG THORACIC SOCIETY LTD). Members who had their names deleted should re-apply as new members. For enquiry, or checking your membership status, please reach Dr Loletta So by email (loletta.so@hotmail.com) or fax (852 2515 3182) (Please supply your name and fax number). Apology for not entertaining telephone enquiry.

Erratum

The Hong Kong Thoracic Society and American College of Chest Physicians (HK and Macau Chapter) Newsletter 2006: 16(2); 23-25:

In the article titled “How to approach a patient who present with lung mass?” The numbering of the references should be from 1 to 13 instead of 15-27. The editorial board apologises for this error.
The fellowship is open to medical practitioners, allied health professionals, scientists, students and others for travelling abroad to engage in research, study and training in order to gain experience in modern methods of diagnosis, prevention and treatment of diseases of the respiratory system. Please note that priority will be given to active members of the Hong Kong Thoracic Society.

The Hong Kong Lung Foundation Fellowship has three types of Awards as specified below:

1. Open to members of the medical profession granting a sum up to HK$50,000 for training of 3 to 9 months and a sum up to HK$60,000 for training of over 9 months.
2. Open to members of the nursing/paramedical profession granting a sum up to HK$30,000.
3. Open to all members of the medical, nursing and paramedical profession granting a sum up to HK$30,000 for attending conference or short training course of 3 months or less.

Hong Kong Lung Foundation Fellowship which opens its application twice a year in June and December. Applicants should submit the application forms to the Hon Secretary of the Hong Kong Lung Foundation, not later than 30th June and 31st December of each year.

Application procedures and application form of Fellowship program can be downloaded from Hong Kong Lung Foundation Website: [http://www.hklf.org/HKLF/hklf_fellows_e.htm](http://www.hklf.org/HKLF/hklf_fellows_e.htm)

Hon secretary: Dr KS Chan, Pulmonary & Palliative Care Unit, Haven of Hope Hospital, Tseung Kwan O, Kowloon, Hong Kong. Fax: 2703 8799 Email: chanks@ha.org.hk

The Hong Kong Lung Foundation was established in 1996 to nurture advancement in clinical practice in the field of lung diseases in Hong Kong Special Administration Region. As from January 2001, the foundation shall award research grants, on an annual basis, to fund research projects being performed in the HKSAR. This aims to enhance the research culture and standards of local clinicians and health-care professionals in the field of respiratory medicine and related disciplines.

Please refer to the Hong Kong Lung Foundation Research grant regulations, which must be strictly adhered to. The completed application form and other required documents must be returned to the Honorary Secretary of Hong Kong Lung Foundation by 30th November of each year. Email submission is also acceptable and should be sent to: chanks@ha.org.hk.

Application procedures and application form of Research Grant can be downloaded from Hong Kong Lung Foundation Website: [http://www.hklf.org/HKLF/research_grants_0304_e.htm](http://www.hklf.org/HKLF/research_grants_0304_e.htm)

Hon secretary: Dr KS Chan, Pulmonary & Palliative Care Unit, Haven of Hope Hospital, Tseung Kwan O, Kowloon, Hong Kong. Fax: 2703 8799 Email: chanks@ha.org.hk
The Pneumoconiosis Compensation Board (PCFB) set up a research fund in 1996 with the purpose to support projects that are related to the prevention, diagnosis, assessment of disability and treatment of pneumoconiosis in Hong Kong. Individual or group are invited to apply. Interested parties may visit the website: www.pcfb.org.hk or contact the PCFB at Tel: 2541 0032, Fax: 2541 0211 or Email: contact@pcfb.org.hk.

The Pneumoconiosis Compensation Board (PCFB) has established a training grant to facilitate health-care workers and occupational safety and health personnel to enhance their knowledge and skills in pneumoconiosis. This scheme aims to encourage eligible applicants to attend overseas training programmes or conferences that are related to the topic of pneumoconiosis. A maximum grant of HK$ 100,000 will be allowed for a suitable course longer than 6 months, and HK$ 50,000 for a course of 6 months or less. Interested applicants may contact the Board Secretariat, Trophy Mak at 2541 0032, or contact the PCFB at Tel: 2541 0032, Fax: 2541 0211 or E-mail: contact@pcfb.org.hk.