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SYNAPSE

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THE PRESIDENT'S ANNUAL REPORT 2015

Patrick CK LI
PRESIDENT, HKCP



The Hong Kong College of Physicians is the statutory organisation responsible for overseeing physician training and setting the standard of internal medicine practice. Over the past year, our College has continued to fulfil this function through the effort of our various Standing Committees, our Specialty and Basic Physician Boards, as well as many of our Fellows who have supported our training programmes in different capacities.

Our College has recognised the growing importance of simulation training in enhancing the competence of physician trainees in performing invasive medical procedures as well as managing complex clinical scenarios. The Education and Accreditation Committee and its Task Force on Simulation Training have been working on the strategy for incorporating simulation into our basic, higher as well as post-Fellowship training

programme. The Specialty Board in Gastroenterology and Hepatology had organised a GI Endoscopy Multi-disciplinary Simulation Training Course in September 2015. In addition, our College will be liaising with the Hospital Authority through the Training Subcommittee of its Central Coordinating Committee (Internal Medicine) on the strategy to enhance the capacity for implementing simulation training programmes for physicians. The key issues will include development of a critical mass of accredited physician trainers in simulation training, as well as a framework for releasing both trainers and trainees to participate in simulation training programmes. The Education and Accreditation Committee has also encouraged the Specialty Boards to proactively develop credentialing framework for new and high-risk invasive procedures which would be applicable in both the public and private sectors. In addition, in order to further enhance the standard of physician training, the criteria for appointment as trainer is being reviewed by our College.

Our College has continued to provide input to the Government on many of its public health initiatives. We have supported the Department of Health on its "Hong Kong Action on Salt and Sugar Reduction" programme with the aim of reducing the dietary intake of salt and sugar in the local population and submitted our views to the Food and Health Bureau on the proposed Voluntary Health Insurance Scheme. We shall also be actively contributing to the Working Group on Defining High Risk Medical Procedures/Practices in Ambulatory Setting under the Steering Committee on Review of Regulation of Private Healthcare Facilities of the Food and Health Bureau. Representatives from our College will serve as Convenors of the Task Forces on Endoscopy, Chemotherapy and Haemodialysis as well as Member of the Task Force on Surgery. Input from physicians practising in public and private sectors will be sought such that a practicable regulatory framework which can safeguard the health of the public can be developed. Our College had also provided technical advice to the Department of Health and the Hospital Authority in developing their care plan for residents of public estates with elevated lead level in drinking water. Our College had continued to assist the Medical Council of Hong Kong in assessing applications for quotable qualifications and reference standards for contact hours of different postgraduate training programmes had been agreed. Our College has also provided support to the Hong Kong College of Paediatricians in their subspecialty development in paediatric neurology and respiratory medicine and is in the process of discussion with the Hong Kong College of Emergency Medicine on training in clinical toxicology.

The Hospital Authority is a key partner of our College in implementing physician training. We have agreed on the partnership model for the

Self Learning Tool project and will be discussing with them measures for facilitating critical care medicine training in public hospitals. We have reflected to the Hospital Authority the hurdles that some of our Fellows face in conducting training and examination during office hours and requested them to streamline the human resources policy so as to facilitate them in fulfilling such responsibilities. We have also submitted to the Food and Health Bureau our views on the working relation and cooperation between our College and the Hospital Authority on specialist training as well as examination issues. We took the view that our College and the Hospital Authority should be partners in implementing specialist training for doctors in Hong Kong. Our College sets standards for and accredit specialist training while the Hospital Authority provides the training ground in terms of clinical exposure, facilities and trainers. Their roles are independent and complementary to ensure a high standard of professional practice. The Hospital Authority should consider training of medical staff a core component of its functions and should lobby the Government to recognise and support its training responsibilities in terms of manpower and funding. Contributions to training and professional examinations and specialist assessment exercise should be part of the job responsibilities of HA staff and should be factored in the manpower need projections. As long as there are objective and fair systems for appointment of trainers and examiners and mutual agreement between our College and the Hospital Authority regarding the framework of training programmes, specialists within the HA should be given official release to conduct training and examination instead of being required to take their own leave. The Hospital Authority should also establish partnership with our College in projecting specialty and subspecialty manpower requirement and formulating manpower

development strategies. Trends in medical staff workload should be closely monitored and there should be commensurate staffing allocation to ensure adequate trainer-trainee and trainee-patient contact time. Our College will continue to communicate and collaborate with the Central Coordinating Committee (Internal Medicine) of the Hospital Authority to follow up the above issues and uphold the standard of physician training and accreditation in Hong Kong.

To commemorate the special occasion of the 40th year since the retirement of the late Professor AJS McFadzean from the University of Hong Kong, our College has published a monograph to pay tribute to his important contributions in laying the foundation for the development of internal medicine in Hong Kong. The reflections of many of his former colleagues and trainees in the monograph provide insight to his vision, philosophy and passion and how he had and will continue to serve as a role model for generations of physicians.

I wish to extend my sincere appreciation to the Chairpersons and Members of the Committees and Boards for their contributions towards upholding the standard of physician training and supporting the various responsibilities and functions of the College. I would also like to thank the retiring Council Members for their many important contributions to the College over the years in various capacities. I am also very grateful to our Honorary Treasurer for monitoring and maintaining the healthy financial position of the College. I would also like to thank our Council Members, in particular our Immediate Past President and Senior Advisor for their unfailing support and invaluable advice over the past year. Finally, I wish to thank our Honorary Secretary and the hardworking and dedicated secretarial staff in maintaining smooth operation of the College.



Patrick CK Li
PRESIDENT, HKCP

THE PRESIDENT'S ADDRESS TO NEW FELLOWS AT THE HONG KONG COLLEGE OF PHYSICIANS CONFERENCE CEREMONY 2015

Dr. Donald Li, President of the Hong Kong Academy of Medicine, President of Sister Colleges and their representatives, Fellows and Members of the College, Invited guests, ladies and gentlemen.

Today is a very special occasion for the newly admitted Fellows and Members. On behalf of the College, I extend to you my congratulations on your well-deserved achievement, which is the result of your dedication and hard work over the past years. This achievement is especially remarkable considering the heavy workload that you all have to cope with. I am sure that you would all appreciate that your success has been realised with the support of your colleagues, your family and loved ones, and you should take time to express to them your gratitude.

The newly admitted Fellows can now rightfully call themselves qualified physicians. I believe many of you would have the experience of being asked by your family or friends about the specialty training that you were undertaking and they might be slightly puzzled when you mentioned that you are training to be a physician or specialist in internal medicine. You might have found it more awkward in trying to explain

them the characteristics of internal medicine practice than any of its subspecialties such as cardiology or nephrology. I think it would be useful for us to reflect on the core qualities of internal medicine practice so that we can become better physicians.

We can trace a long history for the recognition of physician as a distinct branch of clinical practice. In ancient Greece, care of the sick was administered by physician-priests in temples. Hippocrates who lived from 460 to 377 BC was often referred to as the "Father of Western Medicine". He was credited for separating the discipline of medicine from religion and advocated that disease was not a punishment inflicted by the gods but due to the effect of environmental factors, diet and living habits. He founded the Hippocratic School of Medicine and laid the foundation for medicine as a profession. He developed a systematic and comprehensive framework to facilitate diagnosis, treatment and prognostication of diseases based on the accumulated knowledge of his predecessors as well as his own keen observations and empirical methods. He also advocated for strict professionalism, discipline and rigorous practice, the spirit of which is embodied in the Hippocratic Oath. The following quotes that have been attributed to him provide insight into his views on some of the core quality of physician practice.

"It is more important to know what sort of a person has a disease than to know what sort of disease a person has." A physician should "cure sometimes, treat often, comfort always."

To him, there were always the dimensions of science and art in the practice of medicine.

Use of the term physician to designate a distinct branch of medical practice dates back to at least 600 years ago in England. In 1518, Henry VIII of England granted a Royal Charter to found the College of Physicians, in distinction from the earlier incorporated Barber-Surgeons' Guild. Physician practice has often been perceived as equating with expertise in treatment by administration of medication in contrast to the operative procedures performed by surgeons.

We now recognise that the practice of medicine in the time of the Greeks and subsequently for almost two thousand years had been based on theories and concepts of anatomy and physiology which are erroneous. Modern medicine only flourished in the 19th century with improvement in our understanding of anatomy, physiology and pathology. The term

internal medicine was first used by Dr. William Osler in his presidential address to the Association of American Physicians in 1895. He had borrowed the term "Innere Medizin" from the Germans, which had been used to denote a basis in experimental science for their physicians' clinical practice. Thus the physicians get to the underlying basis of the signs and symptoms of an illness using knowledge coming from experimental science rather than dogma.

With the above background information, we can appreciate that the clinical practice of physicians incorporates the dimensions of science, art and inter-personal skills. It requires careful collection of relevant information from the patients and their family, keen clinical observation for significant physical signs and astute interpretation of the findings in the context of the health and psychosocial background before formulating an investigation and management plan tailored for the individual patient. Good physicians take pride in their clinical acumen, diagnostic skills and communication skills as well as their ability to provide holistic and appropriate care to their patients.

In the past two decades, advances in imaging technology and molecular science have greatly facilitated the diagnostic process. New targeted therapeutics and minimally invasive interventions have allowed more precise and even personalised treatment. The rapid pace of practice specialisation and subspecialisation has resulted in the surgical streams evolving into distinct specialty colleges with independent training programmes. Internal medicine on the other hand has continued to be an integral specialty and remained a core component of the healthcare system in most developed countries. While there is also a direction of subspecialisation within internal medicine, and in addition development of many technological and therapeutic advances, the human side of clinical practice and especially

the inter-personal skills remain relevant and are still considered some of the hallmarks of good physicians.

As life expectancy is extended with medical advances, there are an increased number of individuals living with chronic medical diseases, often with multiple co-morbidities in the same person. This poses increasing challenges both in teasing out the active problems in establishing the diagnosis and in providing appropriate treatment to restore impaired body function. It is also necessary to consider the psychosocial implications of issues such as unhealthy lifestyle, work and societal stresses, deterioration in interpersonal relationship when formulating the treatment plan. In addition, medical science is advancing at a rapid pace and modern diagnostics and therapeutics becoming increasingly complex such that appropriate care often require team work involving expertise from different specialties and health disciplines. Furthermore, patients and their family members no longer consider the recommendation of their doctors as indisputable and they have increasingly demanding expectations on the safety and quality of their care. They also have ready access to health and treatment-related information including the credentials and track records of clinicians through the internet.

The above developments indicate an ever growing demand for greater number of well-trained physicians to meet the healthcare needs of the population. However I note with great concern a number of recent trends that threaten the core values of good physician practice.

The population in Hong Kong has all along been highly dependent on the public hospital system in providing care for emergency and catastrophic illnesses. With a growing number of elderly individuals living with multiple chronic medical diseases, we can expect that more and more of them will find it increasingly difficult to afford their long-term medical care

based on their own financial means and turn to the public system for treatment. The low taxation tradition in Hong Kong results in finite funding allocation to the Hospital Authority which may not keep pace with the growth in healthcare demand of the population.

The public hospital system has as a result become increasingly strained in the past few years. Over-crowding in the medical wards had gradually evolved from being seasonal surges into a perennial phenomenon with in-patient occupancy well exceeding 100% for a substantial proportion of the year. With most stable patients undergoing elective procedures being managed in ambulatory settings, the majority of medical in-patients are emergency in nature, often frail and dependent, requiring considerable effort in stabilising their condition. On the other hand, medical departments have become chronically under-staffed and as a result physicians have to work longer hours or inevitably limit the time they can spend on individual patients. The heavy demand for in-patient beds results in drive for ever-shortening length of stay by hospital management. With priority being given to emergency services, the waiting time for elective investigations has become unrealistically long for aiding clinical decisions. Funding constraints also limit the choice of therapeutic options available to the clinician even though they may be considered clinically most appropriate.

It is entirely understandable that the frontline physicians will become frustrated not solely because of the heavy workload but that they are not able to provide quality care to their patients. With the heavy patient load and constant push for efficiency in patient turnover, physicians feel that they are just part of the clockwork in the system tackling isolated issues of their patients without the time or opportunity for total patient care. Some of them may resort to prescribing comprehensive investigation package for their

patients on admission to speed up the turn-around of test results. Others may initiate cross referral of their patients to other specialty teams in order to share the workload and consequently the care may become fragmented. There may also be tendency for piecemeal management of the most pressing clinical issues with other equally important problems temporised till the next hospitalisation or clinic visit. They may not be able to afford the time to review the overall clinical problems or delve into crucial underlying issues that are responsible for deterioration in health or repeated need for hospitalisation.

The job satisfaction for physicians and trainees will only continue to deteriorate if the root problems are not addressed. Ward rounds become a chore with the sole aim of trying to send patients out of the hospital as soon as possible, often against the wish of the patients and their family. During the busy clinic sessions, the attending doctor can only repeat the prescription and arrange investigations or cross refer the patient if there are new symptoms. Requests for interview by relatives which often necessitate considerable time commitment by the doctor are avoided at all cost.

It is disconcerting to note that both physicians and trainees are stretched to their limit by the heavy patient load with the result that their interaction for training and role modelling may be compromised. The low job satisfaction can lead to a growing number of trained specialists leaving the public hospital system and trainees dropping out of the programme. Even more worrying is an increasing proportion of the new resident recruits shying away from a career in internal medicine. With internal medicine playing such a crucial role in providing emergency service as well as support to other clinical specialties in the care of patients with chronic medical diseases, such a scenario cannot be beneficial to the future of the healthcare system in Hong Kong.

I have presented the various problems facing physician practice and training. Can there be solutions to the reverse the deteriorating trend? A fundamental issue is the need for a framework for physician manpower development and allocation that is commensurate with the workload. Our College will continue to express our views and lobby with the Food and Health Bureau and the Hospital Authority to rectify the manpower deficit facing Medical Departments in the public hospital system. The increasing demand from escalation in number of emergency admissions as well as the increasing frailty and dependence of the patients should be recognised and remedied.

The nature of physician practice requires thorough communication with patients and their family in order to formulate an appropriate investigation and management plan and adequate contact time should be factored into the manpower projection.

The Government should revisit its healthcare financing model such that instead of an all-or-none subsidy framework between the public and private sectors, there can be differential grading of support for different medical conditions so that our population will be more inclined to seek treatment outside the public hospital systems. The Hospital Authority should review its overall philosophy and strategy in managing patient load instead of solely focusing on increasing process efficiency. Fundamental drivers of workload should be addressed instead of tackling the issues downstream. There can be better differentiation in the clinical responsibilities among the medical staff according to their experience. For example, the recently re-employed retiring consultants who have been

relieved of their administrative responsibilities can make use of their clinical expertise to conduct review of medical out-patients with multiple active problems or requiring repeated hospitalisation and formulate management plans that can reduce their demand on the healthcare system.

For all of us as individual physicians, we should contribute our part by avoiding generation of unnecessary workload to our colleagues in the system.

For example, we can draw upon our own expertise in internal medicine to manage relatively straightforward clinical problems instead of initiating cross-referrals to other specialty teams. We should exercise clinical judgment and avoid indiscriminate prescription of investigations. We should from time to time revisit entrenched practices and consider if these are actually still of value to the clinical outcome of the patients. While in the short-term, it may involve more effort on our part, in the longer term it would help to simplify the clinical care process and reduce duplication of effort, ultimately conserving more time for us to provide better care to our patients.

As you can all see, the issues are complex and a multi-pronged approach would be needed. I would therefore call upon all of you, especially the new Fellows, to experiment and innovate alternative approaches to manage the workload issues so as to safeguard the standard of physician practice and training in Hong Kong.

SIMULATION TRAINING FOR PHYSICIANS



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BACKGROUND AND HISTORY

Apart from self-learning (e.g. reading) and didactic teaching, apprenticeship is an important traditional method in medical education and training. "See one, do one, and teach one" has been the classical method in learning clinical skills and procedures, with which the trainees are exposed to real patients in the clinical environment. However, this mode of education may expose patients to harm because learners may have inadequate initial experience, knowledge and technical skills necessary to carry out the procedure in a safe manner. In recent years, there appears to be a growing concern from patients that junior doctors might be "practising" on them, while valid consent, quality and safety issues have increasingly been emphasized in our clinical practice. As a result, simulation training has gradually been extending its role in modern medical education since it provides a safe environment for both the learners and patients, even if errors occur during the learning process.

Simulation refers to the artificial imitation of a real-life scenario or process with sufficient fidelity to achieve a particular goal, such as training or assessment.

The military field was originally a major impetus in the development of simulation. In 1903, Edwin Link invented the first jet fighter and in the subsequent year, the first flight simulator was invented.¹ When it was found that using the simulator was an easier and safer method in learning how to fly, it was subsequently commercialized. The guidelines in designing flight simulation scenarios from the aviation industry have subsequently become the essential components and key features in medical simulation training programs, including Crew Resource Management (CRM)

skills, incident avoidance in creating learning objectives and the emphasis in scenario developments and re-evaluations.² The success of simulation as a teaching tool in aviation industry was subsequently recognized by the medical field. While there is evidence to show that models had been used to teach midwives the process of childbirth in 1600's³, the exact origin of simulation training in medicine is not certain. The birth of "Resusci Annie" as a manikin for the practice of external cardiac massage and resuscitation in 1960's had been an important landmark of the era in utilizing simulation for the teaching of modern medicine.^{4,5}



CHARACTERISTICS AND COMPONENTS OF SIMULATION TRAINING

“不聞不若聞之，聞之不若見之，見之不若知之，知之不若行之；學至於行之而止矣” [荀子·儒效篇] was a famous Chinese proverb (similarly known in English as

“Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand”)

which described the usefulness of experiential learning. Simulation training is a kind of experiential learning during which learners re-construct knowledge by linking and integrating new information with existing knowledge through the utilization of scenarios in the learning process. According to Kolbs, there are four stages of effective experiential learning: (i) Experience a scenario/ situation; (ii) Reflection on that experience; (iii) Organize and conclude the new information gained from the experience; (iv) Prepare to apply new information in future similar circumstances. In essence, what Kolbs advocated was to “apprehend and comprehend”.⁶

However, the usefulness of the learning cycle has to be complemented with an appropriate



learning behavior. Adults learn best when they know what they are acquiring is relevant to their own needs and when they are actively engaged in the learning process. Participation in scenarios during simulation training would actively engage the learners and enable them to acquire experience not only limited to new knowledge, but also on associated cognitive and emotional aspects. In fact, Dale *et al.* had demonstrated that the learning curve of active learning is higher than that done in the passive manner and learners can generally remember 90% of what they acquire by active learning (Dale's cone of experience).⁷ Moreover, simulation training would not only provide learners with opportunities to have repeated exposures to even rare and complex scenarios, but also a less boring and more interactive component in the learning process.

Well-designed simulation programs, complemented with high-fidelity simulators, would allow the trainees to be actively engaged in the scenarios and immersed in the teamwork dynamics during the role plays in the learning process. Apart from providing learners an environment to acquire technical skills (e.g. theoretical knowledge, procedures skills etc.), simulation would also accomplish the non-technical aspects (teamwork, leadership, communication). Developments in technology and material science have brought to the emergence of highly advanced and sophisticated tools for simulation training, including the use of virtual reality and 3-D printing in recent years.^{4,5,8}

However, the success of simulation does not solely depend on the level of fidelity or complexity of simulator, but also on how simulation is being utilized in the teaching process. Irrespective of the tools and scenario designs being employed,

the debriefing session is considered a vital item for simulation participants,

when everyone sit down and discuss after experiencing the scenario and training.⁹ To ensure a fruitful debriefing process and learning experience, the “de-briefers”, usually

being the session instructors, have to create a supportive environment so that learners would feel “safe”, respected and being valued. This would be important to enhance their willingness to share experience in an open and honest manner. Learners are encouraged to recall and reflect the experience in the scenarios they have just participated, occasionally with the help of video-recordings. They would be encouraged to express their views on issues like performance gaps, the reasons behind such gaps, what could have improved and the relevance to their real-life experience. During the process, the instructors, apart from encouraging the participants to speak out, have to assist the participants to clarify issues, correct misunderstanding, re-inforce certain pre-defined teaching objectives and occasionally if necessary, release the tension and handle the emotions from the participants.

SIMULATION TRAINING IN HEALTHCARE

Most people might be more familiar with the use of manikins (e.g. Resusci Anne) and “Part-task trainers” (simple anatomical models of body parts in their normal or diseased states) in teaching. With the use of the part-task simulator, one can practise invasive procedures like endoscopy, cannula insertion, or even organ biopsy. However, apart from being utilized in skill-based training on procedures or surgery in medical education, simulation techniques have been employed in acquiring basic clinical skills such as history taking and physical examination on “simulated patients”. Simulated patients (SP) have long been used for medical education.^{10,11} SPs are individuals who are coached to portray specific patients, with a display of specific clinical history, signs and if necessary, emotions and reactions. They can also play the roles of family members, carers or healthcare professionals in different learning scenarios. In more sophisticated training programs, SPs can also be employed with manikins and real patients, as well as providing feedbacks and participating in debriefing with learners and tutors. While having

been used interchangeably with SP, “standardized patients” includes SP as well as real patients who are trained to display their own illnesses in a standardized manner.¹⁰

Moreover, simulation has been used for team-based training, with the aims of improving communication, leadership, teamwork and collaborations among multidisciplinary healthcare team members in various clinical scenarios. Deficiencies in these areas have been identified as the root causes of adverse events and critical incidents in high-risk industries such as the aviation and healthcare.¹² As with the experience in the aviation industry, it has been recognized that training of team members is as important as the training of leaders. With principles adopted from the aviation industry, Crew Resource Management (CRM) focuses on the importance of accurate communications, avoidance of errors and leadership.¹³ Aiming to improve quality and patient safety, CRM is now being taught in many medical simulation training centres,¹⁴ including some in Hong Kong under Hospital Authority.¹⁵

Simulation techniques have also been employed in the assessments of medical trainees. Apart from allow learners to practise physical examination, history taking, and communication skills, SPs have also assisted in post-graduate medical competency assessments and even occasionally being asked to make judgments on candidate’s performance. Structural and well-formatted scenarios and assessment checklists can provide fair and objective means in such assessments. Simulation components are incorporated in some of the Objective Structured Clinical Examinations (OSCE) for undergraduate education¹⁶ and specialist training programmes¹⁷ in countries like USA and United Kingdom. The candidates have to rotate through a number of stations with encounters with SPs, and their clinical competency will be assessed in a structural and standardized manner. Similar examples can also be found in some of the stations of the PACES examination.

Reviews in the use of simulation in medical training had shown that it is

an effective training and assessment tool. It was also shown that internal medicine trainees who practised central venous catheter insertion in a simulation laboratory had significantly fewer procedural complications than residents who were not similarly trained.^{18, 19} However, it was also noted that the designs and methodologies in many of the past studies on simulation training were not of adequate quality, particularly on which specific features of such teaching programs that can lead to more effective outcomes.²⁰⁻²²

SIMULATION MEDICAL TRAINING IN HONG KONG

There have been a growing number of simulation training centres in Hong Kong. At present, there are nine such centres in various local public hospitals, with different levels of role delineations in training functions (basic, advanced skills and “full motion” training units). The existing four “full motion” training units are fully-equipped with audio-visual equipment and simulators, which enable the performance of multi-disciplinary, cross-specialty and team-based training in different focus areas: (i) peri-operative & critical care; (ii) advanced surgical skills; (iii) advanced emergency, trauma & vascular and (iv) infectious diseases, infection control and nursing training. In contrast, the “advanced” skills training centres are responsible for the skill-based training of single specialties with procedural simulators. On the other hand, the Hong Kong Jockey Club Innovative Learning Centre for Medicine (HKJC-ILCM), located at the Hong Kong Academy of Medicine Jockey Club Building, was opened in December 2013 and provides another simulation training centre outside Hospital Authority in Hong Kong. It offers a comprehensive array of training tools including manikins, various types of skill-based simulators (surgical, endoscopy and ultrasound) and training rooms with virtual reality equipment simulating different clinical settings (operating theatre, ward and consultation room).

Simulation training has already been used in medical training in Hong Kong for some time.^{15, 23-24} Simulation

has now been an integral part of intern training, and which covers both skill-based and scenario-based training in different modules. Training courses with simulation components have also been made mandatory in the specialist training in a number of specialties.²⁴⁻²⁸ The Anaesthesiology trainees in Hong Kong are required to attend the EMAC (Effective Management of Anaesthetic Crisis) and EASE (Exposure to Anaesthesia Safety & Emergency) courses in their training, both of which involve various simulation scenarios. The Higher Orthopaedic Trainees in Hong Kong are required to complete the Basic Orthopaedic Bioskill Workshop, training in basic microsurgery skill, fracture fixation course and the ATLS® (Advanced Trauma Life Support®) course, all of which encompass simulation components. On the other hand, the local general Paediatric trainees have to attend Neonatal Resuscitation Program (NRP), Paediatric Advanced Life Support (PALS) and Sedation Course, all of which are simulation-based courses and mandatory to their training. From July 2015 onwards, the Hong Kong College of Emergency Medicine has required its higher trainees to undergo a “Simulation Training course in Emergency Medicine” as part of the mandatory requirements before they can undergo the Exit Examination for Emergency Medicine (EEEM).

SIMULATION TRAINING FOR PHYSICIANS?

Simulation training is at present not a key or mandatory component in the physician training curriculum in Hong Kong. At the time of writing, there are only about 30 qualified simulation instructors amongst nearly 1700 Fellows inside the Hong Kong College of Physicians. The exact reasons behind such an observed lack of enthusiasm are uncertain, but these might include: (i) lack of knowledge; (ii) insufficient trained instructors; (iii) potential operational difficulty to release staff to learn and teach due to the heavy patient load and limited manpower in many medical departments; (iv) the need for specialized training facilities; (v) the relative complexity in designing and initiating a training program

and (vi) the substantial costs in enrolling and organizing simulation instructor and simulation training courses for trainers and trainees respectively. The aforementioned existing meagre supply of qualified simulation instructors can be an important bottle-neck to roll out courses with simulation components for Internal Medicine, particularly when the number of potential target participants would be substantial. The gap would be translated to considerable sacrifice of the instructors' personal time and annual leaves, even if the voluntary trainers can be remunerated under the Special Honorarium Scheme of Hospital Authority. Furthermore, the limited exposure of trainers and trainees to simulation training would not be conducive to sufficient knowledge level towards the potential usefulness of simulation training amongst physicians.

In fact, a lot of invasive bedside procedures (e.g. pleural tapping, intercostal drainage, lumbar puncture, bone marrow aspiration, etc.) are being frequently carried out in the general medical wards. Although at least some items had been taught in the Intern Training Program, many new residents who joined Basic Physician Training might not have been exposed or adequately trained to carry out such procedures independently. Simulation training in such common procedures would likely be beneficial to our young trainees, and certainly to our patients. On the other hand, training in communication techniques with patients and their relatives, or amongst colleagues in clinical management teams would also be helpful in Internal Medicine. Apart from reducing complaints due to communication problems, such scenario-based or team-based training would also help to reduce medical errors and improve quality of care. Last but not least, skill-based simulation training would also be useful for the Higher Physician Trainees who would have to learn invasive procedures such as various endoscopies and endovascular procedures during their training. It is encouraging to note that the first GI Endoscopy Multi-disciplinary Simulation Training Course (GIEMST) had been successfully organized for

the Gastroenterology trainees in 2015, with the support from the Hong Kong College of Physicians, Coordinating Committee (COC) in Internal Medicine and the Simulation Training Committee of Hospital Authority. Apart from skill-based training on endoscopic skills, the course had also incorporated team-based simulation training involving doctors and nurses in scenarios that could be encountered in endoscopic incidents.

It would not be difficult to envisage the potential danger of leaping hastily forward to having mandatory simulation components in the physician training curriculum at this stage. Apart from the possible ambiguities and sentiments²⁹, the practical and operational issues mentioned earlier would be formidable obstacles with such

premature moves. However, having more exposures and training in this area for our trainees and Fellows would prove to be a useful initial step to enable us to utilize this increasingly popular tool in the training pathway for physicians.

CONCLUSION

Simulation training is an educational tool of growing popularity in Hong Kong and the rest of the world. Although more robust research is necessary to strengthen the quality of evidence with this training method, it is generally considered to be useful. With the various areas of Internal Medicine where simulation training can be potentially applied, simulation might merge as an important component in the training curriculum of physicians in the future.

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GERALD CHOA MEMORIAL LECTURE 2015

THE PERSON IN MEDICINE

Prof Eng Kiong YEOH

PROFESSOR OF PUBLIC HEALTH, FACULTY OF MEDICINE
THE CHINESE UNIVERSITY OF HONG KONG



WHO IS A PERSON?

WHAT IS A PERSON?

WHO IS THIS PERSON?

The discourses and debates generated by the 3 questions provide insights and improve understanding of the moral basis of ethical dilemmas in medicine and medical practice. These questions bring into focus, the ethical issues relating to life and death and how we define the ethics of the autonomy of persons in context.

They also shape the values we ascribe to the life of individuals, the appreciation of our humanness and the beliefs which define our relationship with patients.

Methods in Biomedical ethics are theoretical frameworks of ethical principles derived from moral philosophy, which generate rules to guide decisions that arise in deliberations of ethical reasoning. Theories and concepts of personhood examine attributes of a person, and what moral status is bestowed on a person and inform deliberations in abortion choice; one position advocates what makes killing wrong is that the victim is a person, since foetuses are not persons, abortion is morally permissible.

The moral authority for advance directives is derived from the ethical and legal positions of the rights of incompetent individuals

as an extension of the rights of competent individuals, Bioethicists invoke the theory of personal identity, argue the "incompetent" person is no longer the same person as the earlier "competent" person, on the basis of arguments of psychological discontinuity and disconnectedness. Following the earlier choice would appear thereby, to impose another person's will on the later different person.

The question "who is this person" is especially salient in interactions and care of persons with dementia. Interpersonal theories of personhood refer to the three different selves: self-personal identity; attributes a person possesses; and a social self presented to others. People with dementia may have lost social roles but does not necessarily infer a loss of all notion of self. There is a "concealed" person and the challenge is to find that person.

RICHARD YU LECTURE

Innovation in Technology and Cardiovascular Medicine: The Value of Cardiac Imaging Research

Dr Alex Pui Wai LEE

DEPARTMENT OF MEDICINE & THERAPEUTICS,
PRINCE OF WALES HOSPITAL
THE CHINESE UNIVERSITY OF HONG KONG

We are seeing an overwhelming epidemic of cardiovascular diseases. The increasing incidence of cardiovascular diseases demands newer, more effective (and cost-effective) ways to diagnose and treat these diseases. Echocardiography and other modalities of cardiac imaging have played a key role in the clinical management of cardiovascular disease. With the advent of cardiac imaging technology, we are now able to visualize the beating heart and moving valves in real-time and 3-dimension (3D), to be able to quantify myocardial fibers shortening, to assess macro- and micro-vascular function and anatomy non-invasively, and even to deliver drugs and genes to specific locations of the body using micro-bubble ultrasound contrast agents.

Our group has been focusing on the innovative application of new imaging technology in cardiovascular medicine. The information obtainable from echocardiography and imaging (pixels) is a form of big data that can be digitalized and analyzed in new ways, with new techniques, that may bring novel important insights to pathogenic mechanisms and therapeutic targets of cardiovascular diseases. We began to study heart failure patients who are complicated by severe mitral regurgitation secondary to left ventricular dysfunction. It is a common and devastating condition that



responds poorly to treatment even with surgical mitral valve repair. From old, digitally stored echocardiographic images, we devised a new parameter that accurately predicts long-term surgical outcomes by quantifying the degree of mitral leaflet tethering. These findings have important therapeutic implications in terms of selection of suitable candidates for valve repair versus replacement, and of devising new surgical techniques to tackle challenging cases. Our data was published on *Circulation* and widely cited by others.

Degenerative mitral valve prolapse is a common condition affecting 3% of the population. Its prognosis

is determined by the severity of associated mitral regurgitation. However, what determines the occurrence and progression of mitral regurgitation has been poorly understood. Decades of attempts to use 2-dimensional echocardiography to comprehend a complex 3D structure of the mitral valve have provided an incomplete picture. Recently, we attempted to approach this clinical problem from a new perspective that views the mitral valve as a biomechanical model. Using novel real-time 3-dimensional echocardiography technology and quantitative segmentation software, we characterized the link between the 3D mitral valve geometry and the

progression of mitral regurgitation. We discovered that the mitral valve has a complex 3D shape resembling a saddle (or a piece of Pringles® potato chip). In fact, it is a well-known architectural concept that a hyperbolic paraboloid surface (e.g. The Canadian Scotiabank Saddledome) sustains physical stress better and more evenly than a flat surface (**Figure A-C**). With the new 3D imaging technique, we were able to demonstrate, for the first time in humans, that the “unsaddling” of mitral annulus is strongly associated with progressively more severe mitral regurgitation. This study, published on *Circulation*, represents novel, multi-disciplinary work combining contemporary concepts of clinical medicine, mechanical engineering, and computer imaging to open up a new horizon of how clinicians can use the engineers techniques to predict prognosis in structural heart disease.

We have published extensively in high-impact journals including *Circulation*, *European Heart Journal*, *Journal of American College of Cardiology*, and *Nature: Cardiology Review*. On behalf of our group, I have been awarded the European Society of Cardiology Young Investigator Award in 2008, the Hong Kong College of Physicians Distinguished Research Awards in 2009, 2011, and 2013, the State Ministry of Education Higher Education Outstanding Scientific Research Output Awards: First-Class Award in Technology

Advancement in 2012, and the CUHK Faculty of Medicine Research Excellence Award in 2014. The European Society of Cardiology, the EuroEcho-Imaging, and the American Society of Echocardiography Scientific Sessions have recognized our work as Top Scoring Work and Research Highlight in 2013, 2014, and 2015, respectively. Over the past few years, I have been invited as speaker and faculty in major scientific conferences organized by the American Heart Association, the European Society of Cardiology, the American Society of Echocardiography, and European Association of Cardiovascular Imaging.

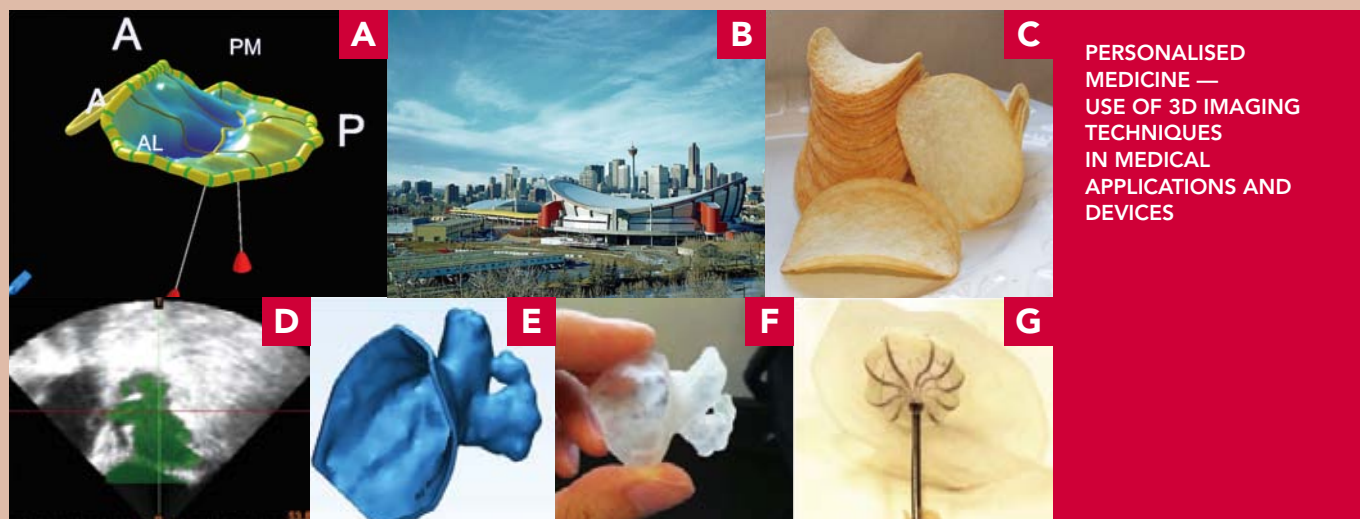
Our research direction in the next 5 years include continuing collaboration with engineers in developing novel methods to extract imaging data for clinical applications; to work with industries to invent and validate cutting edge technologies that will have direct impact on patient care. Our recent industry collaborative work on a novel propriety software called “Anatomically Intelligent Ultrasound” that incorporate artificial intelligence in making imaging diagnosis has been awarded the Top Score Research Highlight by the American Society of Echocardiography, the largest echocardiography society in the world.

Rapid prototyping, also known as additive manufacturing or 3D printing, is a process by which 3D computerized surface models are converted (printed) into physical models. With the unique

capabilities afforded by modern imaging modalities such as CT, MRI, and 3D echocardiography, the use of 3D printing has begun an expansion into medical applications in which it may serve to directly affect patient care as a form of “personalized medicine”. We have begun pioneering work with engineers and industry to test the value 3D printing in rehearsal implantation testing of devices in structural heart intervention such as transcatheter left atrial appendage occlusion to prevent stroke (**Figure D-G**).

At the other end of the spectrum of technological advance, there is an exciting opportunity to bring some already mature technology from the hands of experts to the hands of non-specialists to enable widespread use of technology to benefit more patients. In this regard, evaluation of the clinical impact and cost-effectiveness of such technology as hand-held ultrasound use by non-cardiologists for point-of-care diagnosis will be one of our important future research focuses.

Innovation is taking two or more things that already exist and putting them together in a new way, sparking off new horizons. Our vision is to lead the world in cardiovascular research and to impact clinical patient care through innovation in ideas and technologies. The rapidly developing field of cardiac imaging will be the centre of this exciting journey.





from left to right
Dr Patrick Li, Prof Philip Li



from left to right
Prof TM Chan, Dr Diana Siu, Prof Rosie Young,
Prof KN Lai, Prof Anthony Chan



from left to right
Prof Matthew Ng, Prof Richard Yu,
Prof Joseph Sung



Prof Richard Yu



from left to right
Prof Richard Yu, Prof Kris V Kowdley, Prof TM Chan,
Dr CS Li, Prof Philip Li, Prof MF Yuen



from left to right
Prof Anskar Leung, Dr Andrew Wong, Prof KN Lai,
Dr Matthew Tong, Dr CS Li

ANNUAL SCIENTIFIC MEETING

(17-18 October 2015)

Symposium on Antimicrobial Resistance



Dr Tsang Tak Yin Owen



Dr Lung David
Christopher



Dr Choi Kin Wing

Symposium on Multiple Sclerosis & Neuromyelitis Optica



Prof Wong Ka Sing
Lawrence



Dr Chan Koon Ho



Dr Lau Yuk Lun
Alexander

Symposium on Clinical Management Update – Dyslipidaemia, Rheumatology, and Pulmonology



Dr Nicholas Pegge



Dr Mok Chi Chiu



Dr Yu Wai Cho

The College's annual scientific meeting at the Hong Kong Academy of Medicine Building covered a wide range of hot topics in medicine, ranging from the growing challenges of antimicrobial resistance to the management of multiple sclerosis,

rheumatoid arthritis, chronic obstructive pulmonary disease and dyslipidemia. Highlights included the three prestigious named lectures. Professor Peter Mathieson, our distinguished AJS McFadzean orator delivered an intriguing lecture titled "The kidney

as the centre of the universe". The Gerald Choa Memorial Lecturer was Professor Eng Kiong Yeoh, who provided philosophical insights in how we may regard "The person in medicine". The Richard Yu Lecture by Professor Alex Lee focused on innovations in technology and cardiovascular medicine.

The Sir David Todd Lecture Medal was presented to Professor Ronald Ma for his research in diabetes. Winners of the College's prizes for the Best Thesis Award and the Distinguished Research Paper Award 2015 presented their work on the second day of the meeting.

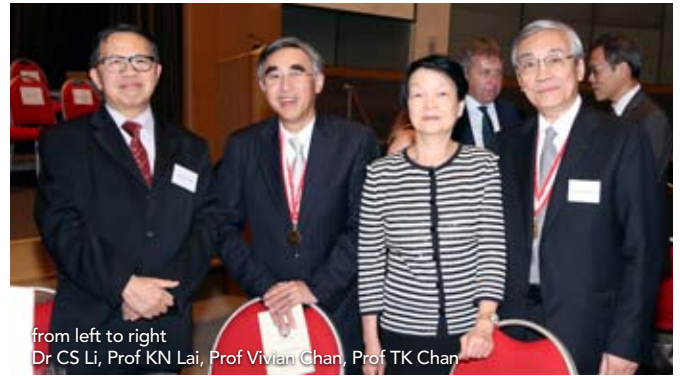
28TH ANNUAL GENERAL MEETING 17TH CONGREGATION AND ANNUAL COLLEGE DINNER

At the AGM held on the 17 October 2015, Dr Patrick Li delivered the Presidential report which summarized the work and achievements during the past year. He addressed the core elements and values integral to physician training which are currently threatened by increasing work burden and suboptimal manpower. He paid tribute to members of the various subcommittees for their continuing contributions rendered to the College.

Three Honorary Fellowships were awarded this year to Professor Joseph Sung, Professor Matthew Ng and Dr John Mackay for their contributions to medicine in Hong Kong and the HKCP.

The official ceremony proceeded with the conferral of Fellowships and Memberships in the presence of a dignified platform party.

New Fellows were admitted during the annual Conferment ceremony held at the Annual College Dinner. The evening's highlight was the 20th AJS McFadzean Oration, followed by the presentation of the College awards for best academic achievements in the year 2014-2015 by the President.



from left to right
Dr CS Li, Prof KN Lai, Prof Vivian Chan, Prof TK Chan



from left to right
Back row: Dr Francis Mok, Dr Carolyn Kng, Dr Johnny Chan
Front row: Prof Richard Yu, Dr Maureen Wong, Dr PW Ng



from left to right
Dr TF Tse, Prof Chew Chin Hin



Council with official platform party



Prof Matthew Ng received Hon Fellow 2015



Dr John Mackay received Hon Fellow 2015



Prof Joseph Sung received Hon Fellow 2015

The AJS McFadzean Oration 2015
THE KIDNEY AS THE CENTRE OF THE UNIVERSE

Professor Peter MATHIESON
 President and Vice-chancellor
 The University of Hong Kong



The Gerald Choa Memorial Lecture 2015

THE PERSON IN MEDICINE

Prof Eng Kiong YEOH
 Professor of Public Health, Faculty of Medicine
 The Chinese University of Hong Kong



Sir David Todd Lecture 2015
UNRAVELING DIABETES AND ITS COMPLICATIONS- A JOURNEY ACROSS THE LIFECOURSE

Prof Ronald Ching Wan MA
 Department of Medicine & Therapeutics,
 Prince of Wales Hospital
 The Chinese University of Hong Kong



Richard Yu Lecture 2015
INNOVATION IN TECHNOLOGY AND CARDIOVASCULAR MEDICINE: THE VALUE OF CARDIAC IMAGING RESEARCH

Dr Alex Pui Wai LEE
 Department of Medicine & Therapeutics,
 Prince of Wales Hospital
 The Chinese University of Hong Kong



Distinguished Research Paper Award for Young Investigators 2015



Dr Kevin Sze Hang LIU

Department of Medicine,
Queen Mary Hospital

Ten day sequential versus 10 day modified bismuth quadruple therapy as empirical firstline and secondline treatment for *Helicobacter pylori* in Chinese patients: an open label, randomised, crossover trial

Kevin SH Liu, Ivan FN Hung, WK Walter Seto, Teresa Tong, Axel SJ Hsu, Frank YF Lam, David YK But, SY Wong, Wai K Leung

Gut 2014 Sep;63(9):1410-5.



Dr Siew Chien NG

Department of Medicine & Therapeutics,
Prince of Wales Hospital

Environmental risk factors in inflammatory bowel disease: a population-based case-control study in Asia-Pacific

Siew C Ng, Whitney Tang, Steve WC Tsang, Tai Chiu Wong, Aric J Hui, Chung Mo Chow, Jessica Ching, Justin CY Wu, Francis KL Chan, Joseph JY Sung

Gut 2015;64:1063-1071.



Dr Walter Wai Kay SETO

Department of Medicine,
Queen Mary Hospital

Winner for the Best Oral Presentation Award

Hepatitis B reactivation in patients with previous hepatitis B virus exposure undergoing rituximab-containing chemotherapy for lymphoma: a prospective study

Wai-Kay Seto, Thomas Sau-Yan Chan, Yu-Yan Hwang, Danny Ka-Ho Wong, James Fung, Kevin Sze-Hang Liu, Harinder Gill, Yuk-Fai Lam, Albert Kwok-Wai Lie, Ching-Lung Lai, Yok-Lam Kwong, Man-Fung Yuen

J Clin Oncol 2014;32:3736-3743.



Dr Grace Lai Hung WONG

Department of Medicine & Therapeutics,
Prince of Wales Hospital

Long-term safety of oral nucleos(t)ide analogues for patients with chronic hepatitis B—a cohort study of 53,500 subjects

Grace Lai-Hung Wong, Yee-Kit Tse, Vincent Wai-Sun Wong, Terry Yip-Cheuk Fung, Kelvin Kam-Fai Choi, Henry Lik-Yuen Chan

Hepatology 2015 Sep; 62(3):684-93.



Prof Vincent Wai Sun WONG

Department of Medicine & Therapeutics,
Prince of Wales Hospital

Incidence of non-alcoholic fatty liver disease in Hong Kong: a population study with paired proton-magnetic resonance spectroscopy

Vincent Wai-Sun Wong, Grace Lai-Hung Wong, David Ka-Wai Yeung, Tina Kit-Ting Lau, Carmen Ka-Man Chan, Angel Mei-Ling Chim, Jill M Abrigo, Ruth Suk-Mei Chan, Jean Woo, Yee-Kit Tse, Winnie Chiu-Wing Chu, Henry Lik-Yuen Chan

Journal of Hepatology 2015;62:182-189.

Young Investigator Research Grant 2015

The following doctors received a research grant from the HKCP to complete their respective projects as named. Selection was decided by a scientific panel headed by Professor KS Wong. Applications for 2016 will be advertised in the College website around April-May of each year.

The grant was established in 2012, to encourage young members of fellow who are aged 40 years or below to conduct research in Hong Kong. Up to five Grants of up to \$50000 each are awarded annually.

Risk of clinical stroke in atrial fibrillation patients with silent cerebral infarcts (CSAR study)

Dr Yannie Oi Yan SOO

Effect of dynamic changes of host serum cytokines on spontaneous hepatitis B s antigen (HBsAg) seroclearance in patients with chronic hepatitis B virus (HBV) infection

Dr Grace Lai Hung WONG

Clinical trial on low molecular-weight heparin infusion as anticoagulation for nocturnal home hemodialysis

Dr Siu Man WONG

Prospective observational study of patient receiving invasive mechanical ventilation out of Intensive Care Unit (ICU) environment in Hong Kong

Dr Wai Tat WONG

Award for obtaining the highest score in AIM Exit Assessment (2015)

Dr Shuk Ying CHAN
DEPARTMENT OF MEDICINE
QUEEN ELIZABETH HOSPITAL



Award for obtaining the highest score in PACES (2015)



Dr Zi CHAN
DEPARTMENT OF MEDICINE & GERIATRICS
UNITED CHRISTIAN HOSPITAL



Dr Pui Kwan CHAN

REPLACEMENT OF CERTIFICATES

At its 291st Meeting of 15 December 2015, the Council decided that Fellows, Members and trainees who requested a replacement of the lost Fellowship, Membership, Intermediate Examination Certificates and specialist certificates, should pay a surcharge of HK\$2500 per copy.

Dr Li Chun Sang
Hon Secretary



The HKCP Council 2015-2016

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National and International Liaison Committee

– Prof Anthony Chan

Education and Accreditation Committee

– Prof Philip Li

Professional and General Affairs Committee

– Dr Doris Tse

Scientific Committee

– Prof Daniel Chan

Membership Committee

– Dr Johnny Chan

Examination Committee

– Prof YH Leung

Administration and Finance Committee

– Dr TF Tse

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– Prof Lawrence Wong

Synapse

– Dr Carolyn Kng



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Dr Tse Man Wah Doris
Prof Wong Ka Sing Lawrence
Dr Ying King Yee Shirley
Prof Yuen Man Fung
Prof Ma Ching Wan Ronald
Dr Ng Ping Wing

Founding President

Prof Sir David Todd

Past President

Prof Lai Kar Neng

Senior Advisor

Prof Yu Yue Hong Richard

SIR DAVID TODD LECTURE

Unraveling Diabetes and its Complications- A Journey Across the Lifecourse

Prof Ronald Ching Wan MA
DEPARTMENT OF MEDICINE & THERAPEUTICS
PRINCE OF WALES HOSPITAL
THE CHINESE UNIVERSITY OF HONG KONG



Asia is at centre of the global diabetes epidemic. Diabetes currently affects one in ten adults in China, with an alarming proportion of young people affected. Type 2 diabetes (T2D) in Asians is characterized by the presence of positive family history, young age of onset, and a tendency to impaired beta-cell function. Furthermore, Asian patients with diabetes have a particularly high predisposition to renal complications. These epidemiological observations have been the driving force in our quest for a better understanding of the pathogenesis of diabetes and its complications in Asians, and led to a multi-disciplinary research program investigating the development of diabetes across different stages of the lifecourse, right up to the maternal intra-uterine environment. A better understanding of the role of different factors and genes in causing diabetes and its complications will hopefully provide new insights and strategies for the prevention of diabetes and other non-communicable diseases.

EPIDEMIOLOGY OF DIABETIC COMPLICATIONS

In order to understand the pathogenesis of diabetes and diabetic complications in the Chinese population, our group has embarked on a program of epidemiological and genetic research. Using the Hong Kong Diabetes Registry, a long-term prospective cohort established to improve understanding of the natural history of diabetes and its complications, we have identified clinical risk factors associated with different diabetic complications (Ma et al, JACC 2008)(Luk et al, Diabetes Care 2010), and developed risk equations to identify individuals at high risk of diabetic complications (Yang X et al, Diabetes Care 2008) (Yang X et al, Am J Cardiol 2008) (Yang X et al, Arch Intern Med 2008) (Yang X et al, Diabetes Care 2009).

Using candidate-gene approach, we have identified the ACE gene insertion/deletion (I/D) polymorphism and polymorphisms within the aldose reductase gene to be important genetic determinants of the risk of diabetic complications (Wang Y et al, Diabetes Care 2005)(So WY et al, Diabetes Care 2008). These findings were confirmed in a recent meta-analysis of genetic predictors of diabetic nephropathy.

We have also identified several genetic variants within the protein kinase C beta- 1 gene which can identify individuals at increased risk of developing end-stage renal disease in diabetes (Ma RC, et al. JAMA 2010). More recently, using genome-wide association study, we have identified additional novel loci associated with increased risk of developing diabetic kidney disease (Ma RC, Diabetologia 2014), and thus may be useful for identifying high risk individuals for treatment. In order to further define the molecular signatory associated with diabetic complications, we are currently

conducting a comprehensive evaluation of the genome, epigenome and transcriptome of subjects with diabetic kidney disease using the latest State-of-the-Art genomic technologies.

YOUNG-ONSET DIABETES IN ASIANS

Asian patients with type 2 diabetes is characterized by presence of a strong family history, young age of onset and presence of beta-cell dysfunction. In our attempts to dissect the underlying pathogenesis of diabetes in Asians, we have conducted a series of studies which identified a number of novel genetic variants associated with type 2 diabetes (Steinthorsdottir et al, Nature Genetics 2007)(Ng et al, Diabetes 2008)(Yasuda et al, Nature Genetics 2008)(Ng et al, JCEM 2010)(Yamauchi et al, Nature Genetics 2010)(Cho YS et al, Nature Genetics 2011)(Lam V et al, PLoS One 2013) (Tam et al, PLoS One 2014)(Hwang et al, Diabetes 2015). Through GWAS, we identified a genetic variant near the PAX4 gene as an important marker for type 2 diabetes in Chinese (Ma RC et al, Diabetologia 2014). This finding

has recently been confirmed, with identification of a nearby functional variant which is common in East Asians (Global T2D-GENES Consortium). Importantly, most of these genetic variants are associated with earlier onset of diabetes, and adversely impact on beta-cell function. We have defined the contribution of these genetic variants to the prediction of diabetes in Chinese (Tam et al, PLoS One 2014), and are currently using re-sequencing to further refine the functional variants underlying these loci in order to improve biological understanding and deliver new treatment targets.

INTRA-UTERINE ENVIRONMENT AND DEVELOPMENTAL ORIGINS OF DIABETES

One of the important observations we made is the key role of maternal inheritance. This has led to studies focusing on the role of maternal diabetes and gestational diabetes on metabolic risk in offspring. Our follow-up studies of longitudinal birth cohorts of mothers with or without gestational diabetes and their offspring have highlighted

the detrimental role of intra-uterine hyperglycaemia (Tam et al, Paediatrics 2008)(Tam et al, Diabetes Care 2010)(Ma et al, Int J Gynaecol Obstet 2009). In particular, our recently completed follow-up of around 1,000 mother-offspring pairs from the Hyperglycaemia and Adverse Pregnancy Outcome (HAPO) Study has highlighted the presence of multiple metabolic derangements in offspring exposed to only mild intra-uterine hyperglycaemia. The long-term persistent effects in offspring despite short-term exposure to maternal hyperglycaemia suggest the presence of epigenetic changes, i.e. heritable changes on gene expression that are influenced by the environment. Our ongoing studies utilizing an epigenome-wide approach have identified some of these epigenetic changes and may hopefully bring new directions to the prevention of diabetes (Ma et al, Keystone Symposium 2014) (Ma et al, Prog Biophys Mol Biol 2015).

TRANSLATING KNOWLEDGE INTO PRACTICE- A PERSPECTIVE ON DIABETES PREVENTION

These epidemiological observations have provided new directions in our efforts to prevent diabetes and its complications. Given the benefit of risk factor control on reducing the impact of diabetic complications, we are now conducting a randomized clinical trial to examine the utility of using genetic markers to identify high-risk individuals, and to motivate individuals to reduce their risk of complications. Furthermore, given the risk of diabetes and obesity in offspring of mothers with gestational diabetes or maternal obesity, ongoing efforts together with international organizations aim to focus on the pre-pregnancy period and pregnancy as an important window of opportunity for preventing diabetes and other non-communicable diseases (NCDs).



BEST THESIS AWARD

Gold Award Winner

Relationship Between Hepatocellular Carcinoma Development and Serum Viral Markers in Patients with Undetectable Serum Hbv Dna Level While on Nucleos(T)ide Analogues

Dr Ka Shing CHEUNG
DEPARTMENT OF MEDICINE
QUEEN MARY HOSPITAL



BACKGROUND AND AIMS

Hepatitis B surface antigen (HBsAg) and hepatitis B core-related antigen (HBcrAg) are risk factors for hepatocellular carcinoma (HCC) development. Linearized HBsAg (HQ-HBsAg) is a novel assay allowing better quantification of HBsAg level. However, little is known whether they remain important for HCC development if there is profound suppression of viral replication by nucleos(t)ide analogues (NA).

METHODS

Seventy-six HBV carriers who developed HCC despite undetectable serum HBV DNA (<20 IU/mL) after at least one-year NA therapy were compared with 152 matched controls who did not have HCC. Clinical and laboratory parameters were analysed in a cross-sectional manner.

RESULTS

There was a significant difference in the median values of HBcrAg level between the HCC group and non-HCC group (10.2 and 1.7 kU/mL, respectively, $p=0.005$), while there were no significant differences in HBsAg or HQ-HBsAg levels. A cutoff value of HBcrAg level ≥ 7.8 kU/mL yielded an area under receiver operating curve (AUROC) of 0.61 (95% CI: 0.54-0.69) with a negative predictive value (NPV) of 77.0%. The odds ratio of HCC development was 3.27 (95% CI: 1.84-5.80). For the subgroup of non-cirrhotic patients, the median values of HBcrAg level of the HCC and non-HCC group were 10.2 and 1.0 kU/mL respectively ($p=0.001$). A cutoff value of HBcrAg level ≥ 7.9 kU/mL yielded an AUROC of 0.70 (95% CI: 0.58-0.81) with a NPV of 80.6%. The odds ratio of HCC development was 5.95 (95% CI: 2.35-15.07).

CONCLUSIONS

A higher HBcrAg level (but not HBsAg or HQ-HBsAg) was associated with an increased risk of HCC development in patients who achieved undetectable serum HBV DNA while on NA therapy.

BEST THESIS AWARD Silver Award Winner

Risk Factors For Hungry Bone Syndrome After Parathyroidectomy In End Stage Renal Disease Patients With Secondary Hyperparathyroidism

Dr Lo Yi HO

DEPARTMENT OF MEDICINE & GERIATRICS
KWONG WAH HOSPITAL



BACKGROUND

Parathyroidectomy is performed when medical therapy fails in renal secondary hyperparathyroidism (SHPT). Hungry bone syndrome (HBS) is a well recognized postoperative complication. This study examines the incidence, clinical course and risk factors for HBS in dialysis patients after parathyroidectomy for SHPT.

METHODS

This is a single center retrospective study involving 62 dialysis patients who underwent parathyroidectomy for SHPT in Kwong Wah Hospital from 2004 to 2014. Detailed analysis of baseline characteristics and laboratory parameters was performed to examine the postoperative course, and incidence and predictors of HBS.

RESULTS

17 (27.4%) of the 62 patients developed HBS after parathyroidectomy. Younger age ($p=0.035$), higher body weight ($p=0.027$), higher preoperative alkaline phosphatase level ($p=0.044$), and lower preoperative calcium level ($p=0.013$) were independent predictors of HBS. The total amount of postoperative calcium and vitamin D supplementation was significantly larger and hospital stay was significantly longer in the group with HBS as compared with those without HBS.

CONCLUSIONS

HBS is an important complication after parathyroidectomy for SHPT. Young age, high body weight, high alkaline phosphatase level, and low calcium level before surgery were identifiable preoperative predictors for HBS.

BEST THESIS AWARD

Bronze Award Winner

Review on Local Experience of Treating Patients with Chronic Myelogenous Leukaemia in Chronic Phase in the Era of Second-Generation Tyrosine Kinase Inhibitors and Beyond

Dr Yuk Man CHEUNG
DEPARTMENT OF MEDICINE
QUEEN MARY HOSPITAL



BACKGROUND

Chronic myelogenous leukaemia (CML) in chronic phase has become a treatable disease since introduction of tyrosine kinase inhibitors (TKI). It is proposed that newer-generation TKIs could further improve long-term outcomes by inducing faster and deeper molecular responses.

OBJECTIVES

This study aimed to collect data on epidemiology, treatment and outcome of CML patients in the molecular era, and review prescription practice of TKIs and their efficacy and safety.

METHODS

All adult patients diagnosed with chronic-phase CML after introduction of molecular methods to assess *BCR-ABL1* transcript levels were included. Outcomes measured included molecular responses at 3, 6 and 12 months, treatment failure, disease progression and deaths. Efficacy and safety profile of TKIs were reviewed.

RESULTS

Fifty-nine patients were identified between September 2006 and December 2014, with 55 patients available for further analyses. For front-line treatment, 32 patients had imatinib, 12 nilotinib, 9 dasatinib, and 2 ponatinib. More than half had stopped first-line therapy, requiring switching to another TKI or cessation of therapy by 12 months. One quarter had *BCR-ABL1* transcript levels of $\leq 10\%$ by 3 months, and cumulative MMR rate at 12 months was 23%. All cases of treatment failure and disease progression occurred in patients on imatinib. Similar cumulative MMR rate was observed outside first-line setting, but with a shorter median time to MMR.

CONCLUSIONS

Newer-generation TKIs are clearly more attractive first-line options than imatinib. Further investigations are warranted to confirm their advantages on long-term outcomes. Definitions and prognostic significance of treatment milestones should be better defined especially outside front-line setting.

Joint HKCPIE/MRCP(UK) Part I examination for the past years:

	Sitting	Pass
Sep 02	100	33 (33%)
Jan 03	124	55 (44%)
May 03 (SARS Special)	21	7 (33%)
Sep 03	54	29 (54%)
Jan 04	93	39 (42%)
Sep 04	29	16 (55%)
Jan 05	96	68 (70.8%)
Sep 05	24	15 (62.5%)
Jan 06	95	74 (80%)
Sept 06	21	13 (62%)
Jan 07	87	67 (77%)
Sep 07	23	12 (52%)
Jan 08	56	38 (68%)
Sept 08	47	32 (68%)
Jan 09	59	47 (80%)
Sept 09	47	28 (60%)
Jan 10	45	28 (62%)
Sept 10	62	39 (63%)
Jan 11	44	23 (52%)
Sept 11	64	49 (77%)
Jan 12	45	28 (62%)
Sept 12	80	59 (74%)
Jan 13	41	22 (54%)
Sept 13	76	60 (79%)
Jan 14	30	20 (67%)
Sep 14	84	64 (76%)
Jan 15	29	20 (69%)
Sept 15	100	71 (71%)

Pass rates for PACES over the past years:

October 2001	36/72 = 50%
February 2002	34/74 = 46%
October 2002	29/72 = 40%
February 2003	30/69 = 43%
October 2003	27/59 = 46%
March 2004	39/64 = 61%
October 2004	26/69 = 38%
March 2005	35/75 = 47%
October 2005	28/75 = 37%
March 2006	36/75 = 48%
October 2006	16/73 = 22%
March 2007	44/74 = 59%
June 2007	44/74 = 59%
October 2007	36/55 = 65%
March 2008	36/74 = 49%
October 2008	29/65 = 45%
February 2009	39/75 = 52%
October 2009	24/72 = 33%
March 2010	33/75 = 44%
October 2010	40/74 = 54%
February 2011	23/66 = 35%
October 2011	34/70 = 49%
February 2012	32/74 = 43%
October 2012	32/74 = 43%
March 2013	28/75 = 37% (for HK local candidates)
October 2013	28/74 = 38%
February 2014	29/74 = 39% (for HK local candidates)
October 2014	21/74 = 28%
March 2015	36/75 = 48%
October 2015	35/75 = 47%

Joint HKCPIE/MRCP (UK) Part II PACES Examination October 2015 Pass List:

Chan Ka Lok	Lau Chung Wai	Li Hao Ying Stephanie	Tsang Chi Wo
Chan Ka Yee Annette	Lau Ka Hung	Lo Hiu Lai	Tsoi Ho Ling
Cheng Shui Kuen	Lau Pui Man Fiona	Lui Tak Wai David	Wong So Yi
Chong Gigi Yui Chi	Lee Angela Wai Kay	Luk Yin Cheung Adrian	Wong Suet Ying
Chow Nga Lai	Lee Arthur Sze Chai	Ng Chun Man Cheryl	Wong Yun Sze
Hung Yik Ching	Lee Tsan Ning	Se Hoi Ue	Yu Chi Kit
Kong Shun Yin	Leung Ka Shing	So Tai Chung	Yu Ting Fung
Kwan Chung Hon	Leung Pui Yi	Sze Ka Kin	Zhou Miaochang
Lam Lap Tin	Li Cheuk Him	Tong Ronald Kin Nam	



SELF LEARNING TOOL

Prof Sydney Chi Wai TANG, Co-Chairman, SLT Committee

Dr Jonas Hon Ming YEUNG, Co-Chairman, SLT Committee

PURPOSE

First commissioned in 2008 in collaboration with the Hospital Authority, the Self Learning Tool (SLT) aims at raising awareness on potential clinical pitfalls and to improve clinical management skills among trainees.

Questions are developed by the SLT Committee which coordinates the efforts of Fellows of all specialties of Internal Medicine across different hospitals in Hong Kong to work together for the betterment of physician training.

Over the years, the SLT has evolved into an abundant and practical repertoire of different clinical scenarios encountered in daily clinical practice.

As such, the SLT provides an additional and important resource that facilitates trainees in accomplishing professional examinations, such as the MRCP for Basic Physician Trainees (BPT) and the Interim / Exit Assessments in Advanced Internal Medicine (AIM) and Geriatric Medicine for Higher Physician Trainees (HPT).

CONTENTS

The SLT is an educational and e-learning tool, in the form of multiple choice questions, designed for Basic Physician Trainees as well as Advanced Internal Medicine and Geriatric Medicine Trainees on clinical scenarios, and is grouped into sets of 10 questions each.

Upon successful training registration, each trainee will be given log-in instructions to access SLT questions to be completed online in a cyclical manner. Answers will be provided at the end of each exercise.

The performance of the trainee at each exercise (i.e. the percentage of correct and incorrect answers returned) will not be logged.

Questions are regularly reviewed and updated, and new questions are added periodically.

Upon completion of BPT programme, trainees entering into HPT programme shall check that their login accounts have been automatically transferred to HPT SLT questions webpage. Trainees can seek help from Programme Directors (PDs) whenever necessary.

REQUIREMENTS FOR BPT AND HPT

A. BPT

BPTs are required to complete 3 sets of 10 questions per year during their training.

All questions for a given set must be completed to qualify successful completion.

Each batch of SLT questions will be released online on the first day of March, July and November every year, and remain accessible for 4 months until the last day of June, October and February, respectively.

Trainees can access and complete the SLT questions online anywhere, anytime for as long as each batch is open. Questions will no longer be accessible online after a cycle has closed.

The Basic Physician Board will notify PDs of the completion status of the SLT questions by their trainees twice for each cycle – at 4 and 2 weeks prior to the closure of each cycle, and those trainees who have not yet completed an active batch of questions will be reminded to do so on time via their PDs. It is, however, the responsibility of the trainee to observe that all questions are duly completed.

New trainees can be exempted from completing the first cycle of SLT questions immediately after their commencement of registration of BPT training, but must otherwise complete all subsequent cycles for the duration of their training.

B. HPT

HPT trainees are required to complete SLT questions during whole HPT period in AIM or Geriatric Medicine (except when during “Suspension of Training”) until passing Exit Assessment.

Completion of SLT is a mandatory requirement for HPT trainees prior to attending Interim and Exit Assessments.

Each cycle of HPT SLT questions lasts for 6 months, starting on 1st April and 1st October every year. Each cycle has 10 questions. Trainee can login at SLT website and answer the questions. Re-login is allowed to complete eventually all the questions in one or more occasions. However, at the end-date of

each question cycle, access to the question set will be closed.

Questions in HPT SLT are designed at more advanced level, to test capability of trainees in approaching and managing more complex clinical scenarios, within scope of Internal Medicine with emphasis on safe and up-to-standard practice.

Before end of each 6-month cycle of SLT questions, trainees are highly recommended to join tutorial organized by corresponding regional PDs in going through the questions and answers with discussions, aiming at further interactive learning and communications. Trainees can feedback to PDs on the SLT questions and answers, whenever there are alternative viewpoints and enquiries.

SUSPENSION OF TRAINING AND TEMPORARY EXEMPTION FROM SLT

Trainees who received formal approval from BPT, or AIM, or Geriatric Medicine Board for “Suspension of Training” can be temporarily exempted from doing SLT questions within the approved “Suspension” period. Thereafter, trainees should resume doing the SLT questions until passing the Exit Assessment.

CONSEQUENCE OF FAILING TO TAKE SLT WITHIN THE SET TIME FRAME

With effect from 2013 (for BPTs) and 2014 (for HPTs) as promulgated in SYNAPSE (2013 September issue), trainees who have not completed an SLT cycle online

within the designated time frame must complete a remedial exercise, which may be held during office hours at the College Chamber and a registration fee of HK\$500.00 will be imposed per trainee.

BPT trainees who fail to undergo the remedial exercise will have their admission to College Membership deferred for a period of three months must also complete the outstanding SLT remedial exercise in order to reinstate their eligibility.

HPT trainees who fail to complete the remedial exercise will have to postpone their Interim Assessment in AIM or Geriatric Medicine for a period of six months and must also complete the outstanding SLT remedial exercise in order to become eligible for the Interim Assessment. Similarly, HPT trainees are required to complete all SLT, including any remedial exercise, before eligible for Exit Assessment.

CONCLUSION

The SLT has established to be an effective training and mandatory requirement for Basic Physician and Higher Physician trainees in AIM or Geriatric Medicine programmes, based on collaboration between Hong Kong College of Physicians and Hospital Authority, with tremendous input from Specialists. Apart from convenient accessibility, interactive nature, educational contents in answers, trainees can have further communications during tutorial with Programme Directors in further enhancing the learning process. Trainees who do not complete any cycle of SLT questions will be required to complete the questions in remedial exercise session at an assigned time with charge as well, before becoming eligible to have Interim and Exit Assessments.