DPP 2015

DIABETES PREVENTING THE PREVENTABLES 2015 FORUM

Courtyard by Marriott Hong Kong Sha Tin

亞洲糖尿病基金會
Asia Diabetes Foundation

www.adf.org.hk/dpp2015

In partnership with:

International Diabetes Federation
IDF Centre of Education

The Chinese University of Hong Kong - Prince of Wales Hospital
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Supporting organization:

香港糖尿病及肥胖症研究所
HONG KONG INSTITUTE OF DIABETES AND OBESITY
10th Anniversary

22 – 23 May 2015 | HONG KONG

CONTENTS

WELCOME MESSAGE

Dear faculty and delegates,

Welcome to Hong Kong, a beautiful city with a rich history and culture. Just like most cities in Asia undergoing rapid transition, diabetes has come a long way over the last two decades. From a simple classification of type 1 and type 2 diabetes, there is now an explosion of information on the phenotypes and genotypes of this complex disease. From a handful of medications, we are now overwhelmed with a growing number of compounds for the treatment, of not diabetes, but many of its associated conditions and comorbidities.

Diabetes is a lifelong disease and the most challenging aspect in managing diabetes is to help patients manage their disease for the rest of their life. To do this effectively, the care team has to systematically collect and manage a large amount of information, collected over time, in order to assess and advise their parents accordingly.

Our health care systems were never designed to manage these chronic problems and information, which are new health care challenges. This DPP Forum is a meeting designed to address these needs. It aims to foster collaborations amongst all relevant stakeholders, who see the need of a new paradigm shift to change the way chronic care should be delivered, in order to bring out the best of our expertise and technologies to make chronic care accessible, sustainable and affordable.

To this end, we are fortunate to have invited a faculty of experts and thought leaders with a diversity of experiences who will share with us their views and insights into this health care challenge.

We hope you will enjoy this meeting and that you will continue to be part of this growing network to prevent and control diabetes and chronic disease.

Professor Juliana Chan
Chief Executive Officer

Dr. Francis Chow
Executive Councillor

ORGANIZER

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SUPPORTING ORGANIZATION

香港糖尿病及肥胖症研究所
HONG KONG INSTITUTE OF DIABETES AND OBESITY
10th Anniversary

ORGANIZING COMMITTEE

Chairman: Professor Juliana Chan

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Dr. Andrea Luk
Professor Ronald Ma
Dr. Risa Ozaki
Dr. Wing-yee So
Mr. Patrick Wong
Ms. Rebecca Yue

FACULTY

E Shyong Tai

Head, Department of Endocrinology, National University of Singapore, Singapore

Associate Professor Tai is a clinician scientist whose main research interest relates to type 2 diabetes and related metabolic disorders. His work largely utilizes epidemiology to understand the pathogenesis of these disorders and the impact that they have on the health of populations. He has published over 200 papers in peer reviewed journals and sits on the committees responsible for several clinical practise guidelines in Singapore. He is currently the head of endocrinology at the National University Hospital.

Kun-Ho Yoon

Professor, Department of Endocrinology & Metabolism, Seoul St. Mary's Hospital, The Catholic University of Korea, Korea

Professor Yoon is a Professor at Seoul St. Mary's Hospital, Catholic University Medical College, Korea. Professor Yoon graduated with his medical degree and also pursued his PhD program at the Catholic University Medical College. He also completed a 2-year stint as a visiting scholar with the Cell biology and islet transplantation section in Joslin Diabetes Center of Harvard Medical School, US at 1996 – 1998. Professor Yoon was the recipient of the KDA Scientific Award three times. He was honoured with HKIDI's Virtual Research Institute Award and health technology Award of ministry of health. Professor Yoon has published more than 100 articles in international peer-reviewed journals with recent publications in Lancet, JAMA, Cell metabolism, Diabetes Care, Diabetes, and so on. His research has been focused on the beta-cell biology and improved diabetes patients care using the mobile and internet platform. He also led the development of treatment guideline of diabetes by KDA and now he served as a vice president of KDA.

Jun-Sing Wang

Doctor, Division of Endocrinology & Metabolism, Department of Internal Medicine, Taichung Veterans General Hospital, Taiwan

Dr. Wang obtained his M.D. degree at the Taipei Medical University, Taiwan in 2001. He completed his residency training of internal medicine in 2006 and subspecialty training of endocrinology and metabolism in 2008 at Taichung Veterans General Hospital, Taiwan. His research interest is pathophysiology related to diabetes and glycemic variability, and has published several papers in Diabetes Care, Diabetes Metab Res Rev, and Diabetes Res Clin Pract, etc. in recent years.

Jothydev Kesavadev

Chairman & Managing Director, Jothydev's Diabetes Research Center, India

Dr. Kesavadev is an Alumnus of Government Medical College, Trivandrum & Mayo Clinic, USA and the Chairman of Jothydev's Diabetes Research Centers Kerala. He is internationally known for pioneering works on cost effective use of telemedicine in diabetes, CGM and Insulin pumps in type 2 diabetes, he has lectured on his original research at ADA, IDF, ATTD, & over 25 countries. He is the lead author for consensus Indian guidelines for insulin pump, vaccination in diabetes, glucose monitoring etc. He publishes monthly internet journal 'JDC Diabetes Gems' since 7 years.

Om Ganda

Senior Physician, Joslin Diabetes Center, USA

Dr. Ganda is a board-certified specialist in Internal Medicine, Endocrinology and Metabolism, and Clinical Nutrition; a senior physician at the Joslin Diabetes Center, Boston, MA; and an Associate Clinical Professor of Medicine at Harvard Medical School, Boston, MA. A co-investigator in the landmark Diabetes Control and Complications Trial (DCCT), he has been engaged in clinical diabetes research for more than 3 decades. He is now co-investigator of Epidemiology of Diabetes Interventions and Complications (EDIC), an ongoing, long-term, follow-up study. He was also a co-investigator of the Diabetes Prevention Program (DPP). In earlier clinical research, he studied insulin secretion in undiagnosed people genetically at risk of type 1 or type 2 diabetes because they had parents or an identical twin with the disease. He served as a Commissioner on the Asian American Commission of Massachusetts (2012-2015).

FACULTY

Ramzi Ajjan

Associate Professor & Consultant in Diabetes & Endocrinology, Leeds University & Leeds Teaching Hospitals Trust, UK

Dr. Ajjan is an Associate Professor and Consultant in Diabetes and Endocrinology at Leeds University and Leeds Teaching Hospitals Trust. He obtained his PhD from the University of Sheffield and completed his clinical training in Diabetes and Endocrinology at Leeds Teaching Hospitals. He was successful at obtaining a Clinician Scientist Award from the National Institute for Health Research-UK in 2005 and developed a spectrum of basic, translational and clinical research studies, aiming to improve clinical outcome in patients with diabetes. His studies concentrate on reducing cardiovascular complications in individuals with diabetes, which remain the main cause of mortality in this population. He described three new mechanisms for hypofibrinolysis in diabetes, with both hypo and hyperglycaemia having key roles. Moreover, he has shown a close relationship between hypoglycaemia and adverse clinical outcome, with enhanced thrombosis risk representing a potential link. Given the pathogenic effects of high and low blood glucose levels, he has been involved in a number of continuous glucose monitoring studies, which further helped to develop the concept of "triangle of diabetes care". His research studies have been published in peer reviewed journals and he presented his work at national and international meetings. His clinical practice concentrates on complicated type 2 diabetes subjects with established cardiovascular disease as well as young adults with diabetes. He is R&D lead for Diabetes and Endocrinology at Leeds Teaching Hospitals, regional lead for clinical endocrine and metabolic research and co-lead of the "Atherothrombosis and Diabetes group" within the Multidisciplinary Cardiovascular Research Centre in Leeds. He research commitments include Associate Editor role in the journal Diabetes and Vascular Disease Research. He is also involved in education by leading locally on first year medical student teaching in Endocrinology and Diabetes and publishing a case-based book covering this speciality.

Rasul Baghirov

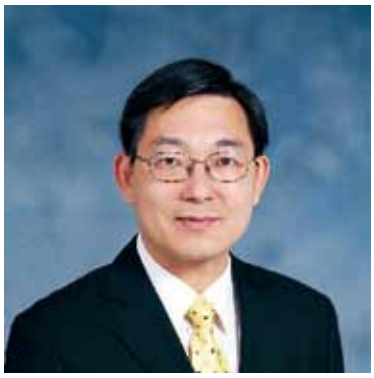
Coordinator for Integrated Service Delivery, Division of Health Systems, World Health Organization, Regional Office for the Western Pacific, Philippines

Dr. Baghirov builds on more than 15 year experience with WHO and World Bank. His main areas of expertise include health systems strengthening, integrated service delivery models, program management and evaluation. Since joining WHO in 2004, he has been working in different positions, countries and regions: regional office for Europe in Denmark, Caribbean coordination program in Barbados, country office in Cambodia. At present, he is a WHO Coordinator on integrated people-centred service delivery in Manila. Prior to his service with UN, he worked as a cardiac surgeon in his home country, Azerbaijan.

Yook-Chin Chia

Professor & Senior Consultant, Department of Primary Care Medicine, Faculty of Medicine, University of Malaya, Malaysia

Professor Chia is a professor and senior consultant at the Department of Primary Care Medicine, University of Malaya. She is also the International Adviser for Malaysia for the Royal College of Physicians of London. Professor Chia is one of the pioneers of the Department and is responsible for launching the postgraduate program in Family Medicine. She is also Director of the Diploma of Family Medicine program for the Academy of Family Medicine of Malaysia. Her research activities are on cardiovascular diseases particularly on hypertension and diabetes. In her capacity as the President of the Malaysian Society of Hypertension, she is collaborating with the Ministry of Heath on a national Salt Reduction strategy.



Anthony Tong

Clinical Psychologist, Department of Psychiatry, United Christian Hospital, Hong Kong

Dr. Tong is a registered clinical psychologist working in the United Christian Hospital, Hong Kong. He is also an honorary associate professor of the Department of Psychology, the University of Hong Kong and clinical supervisor of the clinical psychology programs of both the University of Hong Kong and the Chinese University of Hong Kong. He is the founder and chairman of the United Centre of Emotional Health and Positive Living for the promotion of mental health and positive psychology. He has written a number of self-help books and conducted numerous workshops and training for both professionals and laymen.

FACULTY

Guangwei Li

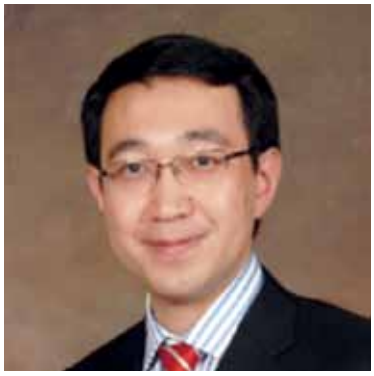
Doctor, Department of Endocrinology, China-Japan Friendship Hospital, China

Dr. Li graduated from Peking Union Medical Collages in 1970. He has being working in China-Japan Friendship Hospital as Professor and Director of Department of Endocrinology since 1998. He had been a Research Doctor in Department of Medicine, Nagasaki University, Japan in 1990 and a Visiting Scientist in NIDDK, NIH, Arizona, USA in 1991. His current scientific interest is epidemiology of diabetes, essential hypertension, insulin resistance. He is the principle investigator of the Da-Qing Diabetes Prevention Outcome Study (1986 – 2009).

Dong-Wook Shin

Assistant Professor, Department of Family Medicine, Seoul National University Hospital, Korea

Professor Shin is an assistant professor in Department of Family Medicine, Seoul National University Hospital. He also serves as a professor in charge for the Department of education, research, and policy in Jong-wook Lee Center for Global Medicine. His area of interest includes Primary Care, Global Medicine (especially in Non-communicable disease, Migrant Health), Health Screening, Health Promotion, Smoking Cessation, Cancer Survivorship, Palliative Care and Health Services Research. He graduated from College of Medicine, Seoul National University, obtained MBA (Master of Business and Administration) degree from School of Business, Kyung Hee University, and earned DrPH (Doctor of Public Health) degree from Catholic University.



Haibo Wang

Director, China Quantitative Medicine Research Institute, China

Dr. Wang is the founding director of China Quantitative Medicine Research Institute, which developed several large national databases for Ministry of Health of China, including the Hospital Quality Monitoring System (HQMS) and National Clinical Information System (NCIS). Dr. Wang and his research team have abundant experiences on the efficient data mining using the large real-world database for policy-making and scientific purposes. He is also the advisor to World Health Organization (WHO) on several WHO projects.

PROGRAMME

23 May (Saturday)		
09:00 – 09:10	Welcome Remarks	Juliana Chan, Hong Kong Francis Chow, Hong Kong
Plenary Symposium		**Co-chairs: Clive Cockram and Su-Yen Goh**
09:10 – 09:55	Clinician scientist – is this an achievable goal?	E Shyong Tai, Singapore
09:55 – 10:40	Is cell replacement for diabetes on the horizon?	Kun-Ho Yoon, Korea
10:40 – 10:55	Coffee Break	
Symposium 1		**Co-chairs: Parinya Chamnan and Wing-Yee So**
10:55 – 11:25	Is glycemic variability clinically relevant?	Jun-Sing Wang, Taiwan
11:25 – 11:55	Using Continuous Glucose Monitoring System (CGMS) and insulin pump to prevent and control diabetes	Jothydev Kesavadev, India
11:55 – 12:25	Titrating insulin to optimize glycemic control in practice	Om Ganda, USA
Abbott Lunch Symposium		**Co-chairs: Alice Kong and Risa Ozaki**
13:00 – 14:00	Value of Ambulatory Glucose Profile (AGP) in clinical decision-making and diabetes management	Ramzi Ajjan, UK
Symposium 2		**Co-chairs: Juliana Chan and Ip-Tim Lau**
14:00 – 14:30	Chronic disease management – a WHO Western Pacific Region perspective	Rasul Baghirov, Philippines
14:30 – 15:00	Chronic kidney disease in primary care setting	Yook-Chin Chia, Malaysia
15:00 – 15:30	Understanding and managing the psychological needs of diabetic patients	Anthony Tong, Hong Kong
15:30 – 15:45	Coffee Break	
Symposium 3		**Co-chairs: Francis Chow and Andrea Luk**
15:45 – 16:15	Learning from Da Qing Diabetes Prevention Program after 23 years	Guangwei Li, China
16:15 – 16:45	Does health screening program improve outcomes?	Dong-Wook Shin, Korea
16:45 – 17:15	The debut of the big-data medicine in China	Haibo Wang, China
17:15 – 17:25	Closing Remarks	Juliana Chan, Hong Kong Francis Chow, Hong Kong

PLENARY SYMPOSIUM

09:10 – 09:55

Clinician scientist – is this an achievable goal?

E Shyong Tai
Head, Department of Endocrinology, National University of Singapore, Singapore

The healthcare system faces many challenges today, including a constant increase in the demand for services as many populations in the world age. In this environment, it is easy to believe that research, particularly by clinicians, is a luxury that we should leave to countries where the supply of physicians is much larger than in our region. In this talk, I make the case that having clinician scientists in the public health system is not only helpful, it is an imperative, if we are to meet the healthcare needs of the future. Clinical research is not just about developing new therapies. It provides an environment of creativity and innovation where the solutions for healthcare can be developed. It brings a rigor to our evaluation of the changes that we make, and requires physicians to develop skills that they are seldom exposed to as part of usual medical education. The challenge lies in recruiting and retaining these individuals within the public hospital system.

09:55 – 10:40

Is cell replacement for diabetes on the horizon?

Kun-Ho Yoon
Professor, Department of Endocrinology & Metabolism, Seoul St. Mary's Hospital, The Catholic University of Korea, Korea

Islet transplantation is one of the promising methods for cure the diabetes and prevents the chronic complications. However, it has not been widely performed in clinical fields because of shortage of human tissue, immune rejection, recurrence of autoimmunity, and complications of immune suppression. As a result, various trials are investigation to create unlimited source of islets for transplantation and to escape immune reaction without the immune suppressant support. One of the reachable strategy to achieve those two goals simultaneously in near future is microencapsulated xenogenic islet transplantation. Microencapsulation of islet is one of the solutions for escape the immune reaction. The semi-permeable characteristic of the alginate membrane, immunoglobulin, complements, and immune cells were not penetrating across the microcapsules while islets could survive and perform their proper function for a long time. Alginate microencapsulation is not enough to maintain islets longevity since innate immune reactions occur with time. Fibrosis progresses over the microcapsules, breaking down their semi-permeability. To solve this problem, we employed various methods; chitosan coating, PEG-rapamycin or dexamethasone coating on the microcapsules and then remarkably improved their biocompatible, biodegradability, and safety. Pig islets are most attractable alternative source for transplantation. Because pig islets are readily available and we already have an enough experience about pig insulin for patients treatment. Hurdles to use pig islets for transplantation are still exist such as zoonosis, difficulty of isolation of pig islet due anatomical difference and xenogenic immune rejection. However some hopeful pig islets transplantation results have reported in nonhuman primate experiments and also human trials are ongoing in some countries. In this lecture, I will present our recent progress of microencapsulated islet transplantation experiments in large animals and clinical islet transplantation experience.

SYMPOSIUM 1

10:55 – 11:25

Is glycemic variability clinically relevant?

Jun-Sing Wang
Doctor, Division of Endocrinology & Metabolism, Department of Internal Medicine, Taichung Veterans General Hospital, Taiwan

The goal of treatment for patients with diabetes is to keep adequate glycemic control to prevent or delay diabetes micro- and macro-vascular complications. Unfortunately, it's not easy to maintain glycemic control over time due to progressed β-cell dysfunction as the disease duration prolonged. Moreover, patients with diabetes are often presented with glycemic variability, which has been associated with oxidative stress independent of glycosylated hemoglobin and related to the pathogenesis of diabetes complications. The importance of glycemic variability in patients with diabetes is further supported by a growing body of evidence unveiling its association with incidence of micro- and macro- vascular diabetes complications.

Furthermore, glycemic variability has been associated with risk of hypoglycemia, an important issue in diabetes treatment, independent of levels of mean blood glucose or glycosylated hemoglobin in patients with diabetes. Several studies had investigated the correlation between glycemic variability and incidence of hypoglycemia in patients with type 1 and type 2 diabetes treated with either insulin or oral anti-diabetes drugs. In summary, these studies suggested that the higher the glycemic variability, the more the risk of hypoglycemia. Hypoglycemia, even asymptomatic, has been associated with adverse cardiovascular outcomes in patients with diabetes.

There are several methods that have been used for the assessment of glycemic variability, such as standard deviation of glucose measurements, M-value, mean amplitude of glycemic excursions, etc. Most of the glycemic excursions in patients with diabetes result from postprandial hyperglycemia, and sometimes from hypoglycemia. Continuous glucose monitoring system may be used to assess postprandial hyperglycemia and nocturnal hypoglycemia (sometimes asymptomatic). Given that glycemic variability has been associated with chronic diabetes complications and risk of hypoglycemia, it should be taken into account and appropriately monitored in the treatment of patients with diabetes. The best strategy for managing patients with diabetes may be lowering glycemic variability along with the control of chronic hyperglycemia to reduce the risk of hypoglycemia.

11:25 – 11:55

Using Continuous Glucose Monitoring System (CGMS) and insulin pump to prevent and control diabetes

Jothydev Kesavadev
Chairman & Managing Director, Jothydev's Diabetes Research Center, India

Currently, technologies are introduced in diabetes only after the onset of complications. Popular examples are treatment of Coronary Artery Disease, Chronic Kidney Disease, foot ulcers, retinopathy etc. where interventions are with the assistance of sophisticated technologies.

However, the whole aim of inventions in preventive diabetes care is to simplify therapies and ensure treatment success. It is easy to sustain the targets of lipids and hypertension provided multi drug compliance is ensured whereas glycemic targets are not only difficult to achieve but many a time challenging to both the patient and physician.

Continuous Glucose Monitoring (CGM) and Insulin pump therapy (IPT) are the two time tested technological advances in diabetes which are of immense benefit in the prevention of complications. CGM devices can be broadly classified into three - Retrospective or Professional devices which will provide interstitial glucose readings once in every 5 mins and real time devices which provide real time display along with low and high glucose trends. The third is Freestyle Libre, which can be used both retrospectively and prospectively to provide interstitial glucose readings without the requirement of glucometer calibrations. The 14 day pattern is collapsed to form a single day model graph termed as Ambulatory Glucose Profile. CGM, apart from its use in the detection of nocturnal hypoglycemia and post prandial hyperglycemic excursions, may also be used for in depth analysis of Mean Amplitude of Glycemic Excursions and Mean of Daily Difference and for the prediction of hypoglycemia. The visual impact provided by CGM is a strong motivational tool for individuals with diabetes as well as pre-diabetes to recognize the abnormal glucose fluctuations and meticulously modify therapies and lifestyles.

Though IPT is close to half a century old, it is still confined to a minority. IPT offer tremendous improvement in peripheral neuropathic pain, sexual dysfunction in men and overall well being. Indian insulin pump guidelines enumerate the ideal indications of using insulin pump therapy. The newly introduced 640G pump with a totally different appearance offers the functionality of predictive low glucose suspend. These inventions are very close to the discovery of artificial pancreas or the completely closed loop systems.

Though expensive, technologies for the prevention of onset of diabetes and its complications should be encouraged since they are far superior and cost effective compared to conventional modalities of prevention and treatment.

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11:55 – 12:25

Titrating insulin to optimize glycemic control in practice

Om Ganda
Senior Physician, Joslin Diabetes Center, USA

While life-long insulin therapy is essential for survival of patients with type 1 diabetes, it also remains the most effective treatment choice for optimal glycemic control in type 2 diabetes. Long–term glycemic control has been proven to reduce morbidity and mortality from chronic complications, in landmark clinical trials including DCCT/EDIC, UKPDS, and others.

Currently there are ever expanding options for achieving glycemic control. Due to its complex pathophysiology, type 2 diabetes is a progressive disease, with ß-cell insufficiency an integral component in its evolution. With the increasing duration of diabetes, often undiagnosed for years, particularly in Asian countries, cumulative hyperglycemia due to inadequate control leads to a vicious cycle of gluco-toxicity and further loss of ß-cell function. A majority of patients require combination therapy with oral agents, typically starting with metformin, and sequentially adding additional agents. Recent updated guidelines at our institution (Joslin), and global societies including ADA/EASD, AACE, and NICE have emphasized addition of basal insulin earlier in the setting of hyperglycemia. This allows continuation of non-insulin therapies for longer periods of time before advancing to multiple insulin injection (MDI) program.

There has been much interest in empowering patients in titrating insulin dosage by simplified algorithms, thus reducing the burden of hyperglycemia as well as health care costs. These will be discussed in detail. In highly motivated patients, advancing therapy with prandial insulin can also be achieved with initial education by primary care physicians and/or nurse educators. The availability of diabetes educators, nutritionist, and psychosocial support are powerful means to enhance patient motivation and achievement of goals. We have also employed education in group settings in patients selected on the bases of age, gender, and co-morbidities. One of highly successful such programs at Joslin is DO-IT (Diabetes Outpatient Intensive Treatment). The utilization of mobile technology via secure web-based patient communication sites is also an important tool, currently receiving increasing attention.

ABBOTT LUNCH SYMPOSIUM

13:00 – 14:00

Value of Ambulatory Glucose Profile (AGP) in clinical decision-making and diabetes management

Ramzi Ajjan

Associate Professor & Consultant in Diabetes & Endocrinology, Leeds University & Leeds Teaching Hospitals Trust, UK

Management of hyperglycaemia in diabetes is an essential step to prevent microvascular complications and reduce the risk of macrovascular disease. However, controlling blood glucose levels can be a challenging task, particularly in insulin treated patients. Treatment of high glucose can result in hypoglycaemia, which is associated with adverse clinical outcome. To add to the complexity, several pieces of evidence indicate that large fluctuations in glucose levels have a negative clinical impact. These difficulties encountered in the management of glycaemia explain the large percentage of individuals with diabetes having suboptimal glucose control.

A key requirement for glycaemic management is repeated blood testing, which is inconvenient to patients and can pose difficulties to the attending physician given the fragmented data. The current presentation will review the effects of glucose abnormalities in diabetes on clinical outcome and will propose an alternative glycaemic management strategy involving "the Triangle of Diabetes Care", a step beyond achieving HbA1c targets.

Continuous glucose monitoring (CGM) provides a tool for monitoring glycaemia by minimising patient inconvenience and avoiding the episodic nature of multiple testing. However, the large amount of data collected by CGM usually requires high levels of expertise in order to interpret the findings and subsequently implement treatment changes. The combination of CGM with ambulatory glucose profile (AGP) analysis offers a tool to improve glycaemic control both safely and effectively. The role of the combined approach of CGM/AGP to improve glycaemia in insulin-treated patients with diabetes will be presented through the the SIGN study (Sensor and Software use for Improved Glucose coNtrol in diabetes managed by insulin therapy). This work demonstrated a differential effect of CGM/AGP in patients with type 1 and type 2 diabetes, which has potential clinical implications. The presentation will also cover real life cases to further highlight the role of AGP in glycaemic management of patients with diabetes.

SYMPOSIUM 2

14:00 – 14:30

Chronic disease management – a WHO Western Pacific Region perspective

Rasul Baghirov
Coordinator for Integrated Service Delivery, Division of Health Systems, World Health Organization, Regional Office for the Western Pacific, Philippines

WHO Regional Office for Western Pacific promotes an integrated people-centred approach for management of chronic diseases. Health is increasingly shaped by ageing populations, urbanization and the globalization of unhealthy lifestyles, resulting in a transition in the burden of health care towards noncommunicable diseases, mental health and injuries. Many of these conditions are chronic, requiring long-term care, with patients suffering from multi-morbidities, adding further complexity and cost to treatment and care.

A holistic approach to prevention can significantly enhance the health status of populations by addressing the behavioural and societal causes of ill health such as lack of exercise, poor diet, tobacco use, etc. What is needed is a fundamental reorientation of health services, a re-balancing of priorities between treatment and prevention, and acknowledging the critical role that interventions in other sectors can play in influencing health. The focus on hospital-based, disease-based and self-contained "silo" curative care models undermines the ability of health systems to provide universal, equitable and financially sustainable care.

Integrated people-centred health services are, therefore, vital. They are defined by WHO as health services that are managed and delivered in a way that ensures people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease management, rehabilitation and palliative care services, at the different levels and sites of care within the health system, and according to their needs throughout life course.

Rapid technological change is enabling the development of increasingly innovative care models, including computer-based self-management programmes for a range of conditions such as diabetes. Telehealth and telecare can improve the self-management of longterm conditions, clinical effectiveness of care, and user/carer experiences. An effective integration of traditional and complementary medicine with national health systems is another important resource for integration and management of NCDs.

Currently, the WHO Western Pacific Regional Office (WPRO) is leading the development of a regional action agenda for building stronger health systems and targeting Universal Health Coverage (UHC). Together with Western Pacific Regional Action Plan for the Prevention and Control of NCDs (2014-2020) it will constitute the core of WPRO's approach towards management of chronic diseases.

14:30 – 15:00

Chronic kidney disease in primary care setting

Yook-Chin Chia

Professor & Senior Consultant, Department of Primary Care Medicine, Faculty of Medicine, University of Malaya, Malaysia

Chronic kidney disease (CKD) is becoming a major public health problem worldwide. While glomerulonephritis was the most common cause of kidney disease several decades ago, current evidence points to hypertension and diabetes as the two major casues of CKD worldwide. With the rise in prevalence of hypertension and diabetes particularly in developing countries, we will see a rise in the prevalence of CKD.

Patients with CKD have a high progression to end stage renal failure (ESRD) and are also at greater risk for cardiovascular disease (CVD morbidity and mortality. There is very solid evidence that reducing and controlling glycaemic and blood pressure levels can slow down progression to ESRD as well as reduce CVD events. Identifying early CKD, for example looking for the presence of microalbuminuria is important as there is good evidence that reducing albuminuria can also slow down the deterioration of kidney function and reduce progression to ESRD.

As most patients with uncomplicated diabetes and hypertension are managed at the primary care level, the potential is there to detect CKD early. Besides looking for micro and macro albuminuria, measures of kidney function using the estimated glomerular filtarion rate rather than just depending on the serum creatinine alone is important.

The choice of therapeutic agents to manage hypertension, particuarly in the presence of albuminuria or diabetes will invariably have to include an agent that targets the renin-angiotension system. Although recent BP targets for hypertensive patients with CKD is now higher than previously recommended, it has been found that the lower the blood pressure the better it is at reducing progression. Augmenting lower glycaemic levels has also been shown to slow down progression of CKD. As CKD is an independent predictor of cardiovascular events, attention also needs tro be paid to the lipid levels. The aim then in primary care is to achieve better blood pressure and glycaemic control early in order to reduce not only CV events but CKD.

15:00 – 15:30

Understanding and managing the psychological needs of diabetic patients

Anthony Tong
Clinical Psychologist, Department of Psychiatry, United Christian Hospital, Hong Kong

Diabetes is one of the most common chronic diseases and its complications can markedly affect the quality of life of the patients. The role of lifestyle and behavioral factors in the development of this disease is widely acknowledged. There is no doubt that the management of diabetes must involve not only medication but also lifestyle change and It is recognized that education regarding nutrition, exercise, blood glucose self-monitoring, and medication and insulin administration are essential components of diabetes treatment. However, ignoring the psychological issues involved in diabetes can significantly reduce the effectiveness of disease self-management (Norris et al., 2001). Emotional distress and disorders are common among diabetic patients; the prevalence of depression among these patients is around 10-15% (Gavard et al., 1993). Research shows that patient distress and emotional problems reduces regimen adherence in diabetes treatment which in turn reduces glycemic control (Anderson et al., 2001). Therefore, lifestyle modification and disease self-management among diabetic patients should incorporate the understanding and management of the psychological needs of the patients.

Research shows that psychological interventions can be effective in reducing psychological distress symptoms and enhancing the emotional and physical health of diabetic patients. Cognitive-behavioral therapy is the most commonly used intervention approach; its therapeutic techniques such as relaxation training and reframing catastrophic cognitions were found to be successful in significantly lowering the patients' anxiety and depression (Boyle et al., 2004). Teaching patients acceptance and mindfulness skills are shown to be effective in reducing glycated hemoglobin values and enhancing diabetes self-care (Gregg et al., 2007). Motivational interviewing is often incorporated into the psychological management for increasing the patients' motivation for lifestyle and behavioral changes. Interventions to increase self-efficacy and formulate goal setting are also important strategies. The psychological interventions should be personalized to fit the particular needs of the patient with manageable goals and specific intervention strategies. Finally some preliminary data in the local clinical settings would be highlighted in this presentation.

SYMPOSIUM 3

15:45 – 16:15

Learning from Da Qing Diabetes Prevention Program after 23 years

Guangwei Li
Doctor, Department of Endocrinology, China-Japan Friendship Hospital, China

Background

Lifestyle intervention can reduce the risk of diabetes among persons with impaired glucose tolerance (IGT), however it remains unclear whether diabetes will be delayed over longer period, and whether the benefits will extend to the prevention of diabetes vascular complications and the reduction of mortality. We examined the long-term effect of lifestyle intervention on incidence of diabetes and its related complications and mortality among people with IGT who participated in the Da Qing Diabetes Prevention Study.

Methods

In 1986, 577 adults with IGT were randomly assigned by clinic to a control or one of the three lifestyle intervention groups and followed actively until 1992. 20 years later in 2006 and 2009, we traced the living status and collect the data of retinopathy in all participants of the study.

Results

During the 6-year active intervention and 20 years follow-up period, 43% vs 80% of the intervention group and 66% vs 93% of the control group had developed diabetes. After controlling for age and clustering by clinic, participants in the combined intervention group had a 51% (HR 0.49, 95%CI 0.33-0.73) lower incidence of diabetes in the active intervention period and a 43% (HR 0.57, 95% CI, 0.41–0.81) lower incidence over the 20 years follow-up than those in the control group. Over 20 years of follow-up, cumulative all-cause and CVD mortality was 29%, 15.9% in the control group and 23.7%, 10.7% in the intervention group respectively, showing that lifestyle interventions resulted in a non- significant reduction of 17% (HR 0.83, 95% CI 0.48-1.40) in CVD mortality. Later in 2009, over 23-years of follow-up, in the intervention compared to the control group, after adjusting for cluster randomization, we observed 41% reduction in CVD mortality ((HR 0.59; 95% CI 0.36-0.96) and a 29% reduction in all-cause mortality (HR 0.71; 95% CI 0.51-0.99). Importantly, we also found a 47% lower incidence of severe retinopathy in the intervention group than the control group (HR 0.53, 95% CI 0.29-0.99). The incidence was 16.2% in the control and 9.2% in the combined intervention group (p=0.03).

Conclusions

Group based lifestyle interventions over a 6 year period have long-term effects on prevention of diabetes beyond the period of active intervention. Benefits of the intervention significantly reduced severe diabetes retinopathy and extended to a favorable reduction of CVD and all cause mortality.

16:15 – 16:45

Does health screening program improve outcomes?

Dong-Wook Shin
Assistant Professor, Department of Family Medicine, Seoul National University Hospital, Korea

Cardiovascular disease (CVD) is the most common cause of morbidity and mortality in the world. Since several CVD risk factors are modifiable, there is expectation that early detection and treatment of CVD-related health conditions will decrease the burden of CVD. Recently, the United States launched a "Million Hearts" initiative, and the United Kingdom launched NHS Health Check. However, there are many debates on the effectiveness and cost-effectiveness of such screening-based primary prevention programs.

A systematic review of randomized trial showed no benefit of health checks in adult populations unselected for disease or risk factors. However, trials included were old and consequently used treatment different from what would be used today. A Danish trial involving screening and lifestyle counseling showed positive lifestyle outcomes, but had no effect on ischemic heart disease, stroke, or mortality at the population level after 10 years. However, a Canadian community based health promotion and prevention program targeted at older adults reduced cardiovascular morbidity at the population level.

In Korea, the Korean National Health Insurance (KNHI) Corporation provides a biennial CVD health screening program to all national health insurance members over 40 years of age free of charge. The prevention programs aims to detect and treat CVD-related health conditions including hypertension, diabetes, and dyslipidemia early to reduce the burden of CVD and offers subsequent educational counseling or treatment referral for participants with identified health problems.

We investigated whether a CVD health screening program is associated with CVD-related health conditions, incidence of cardiovascular events, mortality, healthcare utilization, and costs. We included 3% random sample of all KNHI members 40 years of age or older and free of CVD or CVD-related health conditions, and a total 443,337 participants were included. The hazard ratios for CVD mortality, all-cause mortality, incident composite CVD events, myocardial infarction, cerebral infarction, and cerebral haemorrhage comparing participants who attended a screening exam during 2003-2004 compared to those who did not were 0.58 (95% CI: 0.53-0.63), 0.62 (95% CI: 0.60-0.64), 0.82 (95% CI: 0.78-0.85), 0.84 (95% CI: 0.75-0.93), 0.84 (95% CI: 0.79-0.89), and 0.73 (95% CI: 0.67-0.80), respectively. Screening attenders had higher rates of newly diagnosed hypertension, diabetes mellitus and dyslipidemia, lower inpatient days of stay and cost, and lower outpatient cost compared to non-attenders. Participation in CVD health screening seems to be associated with lower rates of CVD, all-cause mortality, and CVD events, higher detection of CVD-related health conditions, and lower healthcare utilization and costs.

16:45 – 17:15

The debut of the big-data medicine in China

Haibo Wang
Director, China Quantitative Medicine Research Institute, China

Hospital Quality Monitoring System (HQMS) is a national mandatory patient-level databases for official hospital accreditation purpose in China. At of the end of 2014, HQMS automated data collection network covered 775 class 3 hospitals in 29 provinces, which has captured more than 40 million in-patients' discharge medical records between 2013-2014. Everyday there are more than 70,000 newly discharged patients records automatically captured by HQMS, which renders 2 million new records in the database monthly. The diseases' spectrum of HQMS covered more than 95% of diseases in ICD-10 coding system. For each patient, 356 variables including demographic, clinical diagnoses, procedures, pathology reports, financial breakdowns and detailed information of affiliated hospitals, divisions and medical personnel had been documented in the database. The patient level data currently contained in the database is account for 3.2 trillion RMB medical expenses and more than 83 million observed patient-year between 2013 – 2014.

Supported by the National Health and Family Planning Commission (NHFPC) and the World Health Organization (WHO), HQMS data was used to generate the national and regional reports on the medical service of class 3 hospitals to address the baseline of the current status of medical service in China. The scalable model to address the current disease burden, cost, medical resource allocation and patient outcomes for major Non-Communicable Diseases (NCDs) has also been developed.

NOTES

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ACKNOWLEDGEMENTS

The Organizing Committee would like to extend their sincere thanks to the following companies for their support to the Diabetes Preventing the Preventables 2015 Forum.

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* Frequency of hypoglycemia depends on the background antidiabetic therapy used.
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References
1. Forxiga™ prescribing information. 2. Bailey CJ, et al. Lancet 2010;375:2223–2233. 3. Nauck MA, et al. Diabetes Care 2011;34:2015–2022. 4. Wilding JP, et al. Ann Intern Med 2012;156:405–415. 5. Bailey CJ, et al. BMC Med 2013;11:43. 6. Nauck MA, et al. Diabetes Obes Metab 2014 Jun 12. doi: 10.1111/dom.12327. [Epub ahead of print]. 7. Wilding JP, et al. Diabetes Obes Metab 2014;16:124–136.

Presentations:
Dapagliflozin (as propanediol monohydrate) film-coated tablet. Indications and Usage: Improve glycaemic control in adults aged 18 years and older with type 2 diabetes mellitus, as monotherapy when diet and exercise alone do not provide adequate glycaemic control in patients for whom use of metformin is considered inappropriate due to intolerance, or in combination with other glucose-lowering medicinal products including insulin, when these, together with diet and exercise, do not provide adequate glycaemic control. Dosage and Administration: 5 mg or 10 mg. To be taken orally once daily at any time of day with or without food. Tablets are to be swallowed whole. Contraindications: Hypersensitivity to the active substance or to any of its excipients. Warnings and Precautions: Should not be used in patients with type 1 diabetes mellitus, for the treatment of diabetic ketoacidosis, in patients with hereditary problems of galactose intolerance, the Lapp lactase deficiency, or glucose-galactose malabsorption, and while breastfeeding. Not recommended in patients with moderate to severe renal impairment (CrCl < 60 ml/min or eGFR < 60 ml/min/1.73 m²), patients concomitantly treated with pioglitazone, patients receiving loop diuretics or who are volume depleted, and in patients 75 years and older for initiating dapagliflozin. Discontinued if renal function falls below CrCl < 60 ml/min or eGFR < 60 ml/min/1.73 m², and when pregnancy is detected. Temporarily interrupted in patients who develop volume depletion until the depletion is corrected, and when treating postmenopausal women. Caution in patients on anti-hypertensive therapy with a history of hypotension, elderly patients, and patients with already elevated haematocrit. Limited or no data in hepatic impairment, cardiac failure, pregnancy, paediatric population, and when used with DPP4 inhibitors or GLP1 analogues. Adverse Reactions: Very common: Hypoglycaemia when used with SU or insulin. Common: Vulvovaginitis, balanitis and related genital infections, urinary tract infection, back pain, dizziness and dyslipidaemia, dyslipidaemia and increased haematocrit. Uncommon: Vulvovaginal pruritus, volume depletion, thirst, constipation, hyperhidrosis, nocturia, increased blood creatinine and blood urea. Drug Interaction: Coadministration with rifampicin may reduce dapagliflozin systemic exposure, coadministration with mefenamic acid may increase dapagliflozin systemic exposure. Local prescribing information is available upon request.
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Trajenta Duo®
Presentation: Linagliptin/Metformin hydrochloride fixed combination: 2.5 mg/500 mg, 2.5 mg/850 mg, 2.5 mg/1000 mg tablets. **Indications:** Adjunct to diet and exercise to improve glycaemic control in adults with type 2 diabetes mellitus inadequately controlled on their maximal tolerated dose of metformin alone, or metformin and a sulphonylurea, or those already being treated with the combination of linagliptin and metformin. **Dosage:** Should be taken twice daily with meals. **Contraindications:** Hypersensitivity to linagliptin or metformin or to any of the excipients. Diabetic ketoacidosis. Diabetic pre-coma. Renal failure or renal dysfunction (creatinine clearance < 60ml/min). Acute conditions with the potential to alter renal function such as dehydration, severe infection, shock. Acute or chronic disease which may cause tissue hypoxia such as cardiac or respiratory failure, recent myocardial infarction, shock. Hepatic impairment. Acute alcohol intoxication, Alcoholism. **Special warnings and precautions:** Should not be used in patients with type 1 diabetes or for the treatment of diabetic ketoacidosis. When Trajenta Duo is used in combination with a sulphonylurea, a dose reduction of the sulphonylurea may be considered. Risk of lactic acidosis. Monitoring of renal function. Temporarily discontinuation in patients undergoing surgery. Should be temporarily discontinued in patients undergoing radiologic studies involving intravascular administration of iodinated contrast agents. Combination with insulin. Caution with patients 80 years and older. Patient with previously well controlled type 2 diabetes on Trajenta Duo who develops laboratory abnormalities or clinical illness. Discontinue use if pancreatitis is suspected. Not recommended in paediatric patients. Should not be used during pregnancy. Caution while breast-feeding. **Interactions: Interactions with Linagliptin:** rifampicin. **Interactions with metformin:** drugs tending to produce hyperglycaemia. Alcohol. Medicinal products containing alcohol. Cationic substances. Iodinated contrast agents. **Adverse reactions:** Linagliptin plus metformin: uncommon: nasopharyngitis, cough, decreased appetite, diarrhea, nausea, vomiting, rash, pruritus, blood amylase increased. Rare: hypersensitivity, angioedema, urticaria. Not known: pancreatitis. **Linagliptin plus metformin plus sulphonylurea:** very common: hypoglycaemia. **Linagliptin:** all identified adverse reactions are also described for linagliptin plus metformin. **Metformin:** very common: abdominal pain. Common: taste disturbance. Very rare: lactic acidosis, Vitamin B12 deficiency, liver function disorders, hepatitis, skin reactions (such as erythema, urticaria). **Note:** Before prescribing, please consult full prescribing information.

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Ref. 1. WS Weintraub. Can J Cardiol 2006; 22 (Suppl B):56B-60B
2. M Aoki et al. Diabetologia 2001Aug;44(8):1034-1042
3. Choi JM et al. J. Pharmacol Exp Ther. 2002 Mar;300(3):787-793
4. T Wang et al. Atherosclerosis 2003 Dec;171(2):337-342

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References: [DEL1366] Del Prato S, et al. Diabetes Obes Metab. 16: 1239–1246, 2014. [WHI13] White WB, et al. N Engl J Med 2013; 369: 1327-1335.

*SU: sulphonylurea †ACS: acute coronary syndrome

Composition: FC tab: alogliptin 6.25 mg, 12.5 mg, 25 mg. Indications: Improves glycemic control in adult w/ type 2 DM: As monotherapy as an adjunct to diet & exercise in patients for whom metformin is inappropriate. In combination w/ metformin, sulfonylurea, pioglitazone or insulin (w/ or w/o metformin) when diet & exercise plus/ metformin, sulfonylurea, pioglitazone or insulin do not provide adequate glycemic control. Dosage: 6.25 mg or 12.5 mg or 25 mg once daily. Administration: Swallow whole. Contraindications: Hypersensitivity. Special Precautions: Type 1 DM or for the treatment of diabetic ketoacidosis; CHF of NYHA functional classes III &IV; abnormal liver tests; severe hepatic impairment (Child-Pugh score >9). Discontinue if pancreatitis is suspected. In combination w/ metformin & pioglitazone may increase risk of hypoglycemia. History of angioedema w/ another DPP-4 inhibitor; moderate or severe renal impairment, or ESRD requiring dialysis. Periodically monitor measurements of blood glucose & HbA1c levels. Obtain liver test panel prior therapy. Pregnancy & lactation. Ped patient <18 yr. Adverse Reactions: Anaemia, neutropenia; abdominal pain, constipation, nausea, toothache, vomiting; fatigue, peripheral oedema, pyrexia; gastroenteritis, influenza, nasopharyngitis, pharyngitis, upper resp tract infection; increased C-reactive protein, decreased CrCl; dyslipidaemia, hypercholesterolaemia; arthralgia, back pain, muscle spasms, musculoskeletal pain, pain in extremity; diabetic neuropathy, headache; cough; pruritus, rash; HTN.

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- JANUMET XR should generally be avoided in patients with hepatic disease, use with caution against excessive alcohol intake. Before initiation of JANUMET XR renal function should be assessed.
- When sitagliptin was used in combination with a sulfonylurea or insulin, medications known to cause hypoglycemia, may require a lower dose of secretagogue or insulin to reduce the risk of hypoglycemia.
- Adverse Reactions: **Clinical Trials:** *Sitagliptin and Metformin Immediate-Release Co-administration:* most common (≥5%) Diarrhea, Upper Respiratory Tract Infection, Headache. *Sitagliptin in Combination with Metformin Immediate-Release and Glimepiride* (≥5%): hypoglycemia. *Sitagliptin in Combination with Metformin Immediate-Release and Rosiglitazone* (≥5%): upper respiratory tract infection, nasopharyngitis, peripheral edema and headache. *Sitagliptin in Combination with Metformin Immediate-Release and Insulin* (≥5%): hypoglycemia
- **Postmarketing Experience:** Hypersensitivity reactions including anaphylaxis, angioedema, rash, urticaria, cutaneous vasculitis, and exfoliative skin conditions including Stevens-Johnson syndrome; upper respiratory tract infection; hepatic enzyme elevations; acute pancreatitis, including fatal and non-fatal hemorrhagic and necrotizing pancreatitis; worsening renal function, including acute renal failure (sometimes requiring dialysis); constipation; vomiting; headache; arthralgia; myalgia; pain in extremity; back pain.
- **For additional adverse experience information, see the product circular.**
- **Before initiating therapy, please consult the full prescribing information.**

References: 1. L. A. Donnelly et al. Adherence in patients transferred from immediate release metformin to a sustained release formulation:a population-based study. Diabetes, Obesity and Metabolism, 11, 2009, 338–342. 2. C. Reasner. The effect of initial therapy with the fixed-dose combination of sitagliptin and metformin compared with metformin monotherapy in patients with type 2 diabetes mellitus. Diabetes,Obesity and Metabolism 2011;13:644–652 3. Hong Kong Product Circular(JANUMET XR).

NEW ONCE-DAILY Janumet XR (sitagliptin/metformin extended-release, MSD)

Please see the adjacent Brief Summary of the Prescribing Information. Before prescribing JANUMET XR, please read the accompanying Prescribing Information.

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