EDM HK

Endocrinology, Diabetes & Metabolism Hong Kong
Inauguration Conference

18th Nov 2018

Hong Kong Convention & Exhibition Centre

JOINTLY ORGANIZED BY

瑪麗醫院
Queen Mary Hospital

K. K. LEUNG DIABETES CENTRE
瑪麗醫院
Queen Mary Hospital

OSTEOPOROSIS CENTRE

Contents

Welcome Message

Welcome to the Endocrinology, Diabetes and Metabolism Hong Kong Inauguration Conference, jointly organized by the KK Leung Diabetes Centre, Osteoporosis centre of Queen Mary Hospital, and the Division of Endocrinology, Diabetes & Metabolism, Department of Medicine, University of Hong Kong.

The event introduces a new platform for practicing clinicians to share with each other the updated information and knowledge on endocrine diseases. In addition to popular topics such as diabetes, osteoporosis and thyroid diseases, the important "must knows" of less common endocrine disorders are also covered in the conference. We are most honoured to have distinguished local and overseas speakers to deliver compelling and insightful lectures and share with us their valuable clinical experiences.

On behalf of the Organizing committee, I would like to thank all our speakers, chairpersons and sponsors, whose enthusiastic support have contributed to the success of the event. I hope you find the conference an enjoyable, fruitful and rewarding experience.

Dr. YC WOO
Chairman of Organizing Committee
Endocrinology, Diabetes and Metabolism Hong Kong

Scientific Programme

18 November 2018

08:15 – 09:00	**Registration**		
	Symposium 1A: Endocrinology *(S221)* *Chairmen: Dr. Victor HF HUNG, Dr. June KY LI*	**Symposium 1B: Thyroid** *(S226 – 227)* *Chairmen: Dr. YW NG, Dr. MW TSANG*	
09:00 – 09:25	**Adrenal Incidentaloma** Dr. David TW LUI	**Pitfall in Thyroid Hormone Assays** Prof. Sidney TAM	
09:25 – 09:50	**Advances in Medical Therapy for Pituitary Tumours** Prof. Kathryn CB TAN	**Special Issues on Management of Thyroid Disorders** Dr. Alan CH LEE	
	Plenary Lecture 1 *(S221)* *(Sponsored by Eli Lilly)* *Chairman: Prof. Karen SL LAM*		
09:50 – 10:30	**Getting the Best from Antidiabetic Injectables** Dr. WS CHOW		
10:30 – 11:00	**Tea Break and Exhibition** *(Sponsored by Eli Lilly)*		
	Symposium 2A: Treatment Advances 1 *(S221)* *Chairmen: Dr. KP LAU, Dr. Vincent TF YEUNG*	**Symposium 2B: Bone** *(S226 – 227)* *Chairmen: Dr. KW CHAN, Dr. KF LEE*	
11:00 – 11:25	**DM: Use of CGMS** Dr. Nicole SM CHAU	**Diabetes and Bone** Dr. YC WOO	**Workshop: Application of Metabolomics in Endocrine and Metabolic Research** *(S228)* (10:55-11:25) Dr. Peter WURTZ
11:25 – 11:50	**Hyponatremia** Dr. Paul CH LEE	**Approach to Patients with Secondary Osteoporosis** Dr. Joanne KY LAM	**DXA Mini Workshop** *(S228)* Dr. Alan CH LEE
	Lunch Symposium A *(S221)* *(Sponsored by Amgen)* *Chairman: Prof. Rosie TT YOUNG*		
12:00 – 12:35	**Combination and Sequential Therapies in the Management of Osteoporosis** Prof. Socrates PAPAPOULOS		
	Lunch Symposium B *(S221)* *(Sponsored by Eli Lilly)* *Chairman: Dr. SC TIU*		
12:35 – 13:10	**Anti-osteoporosis Drugs – How to Choose?** Dr. TP IP		**Live USG Thyroid Demo -1** *(S228)* Dr. TW WONG
	Plenary Lecture 2 *(S221)* *(Sponsored by AstraZeneca)* *Chairman: Prof. Ronald CW MA*		
13:10 – 13:50	**DECLARE: What is the Impact to Our Existing Clinical Practice?** Prof. Andrew SINDONE		
	Plenary Lecture 3 *(S221)* *(Sponsored by Boehringer Ingelheim)* *Chairman: Dr. John TC MA*		
13:50 – 14:30	**SGLT2 and DPP4 Inhibitors: From Cardiovascular Outcome Trials in Diabetes to Clinical Implications** Prof. Per-Henrik GROOP		
	Symposium 3A: Treatment Advances 2 *(S221)* *Chairmen: Dr. Andrew YY HO, Prof. Annie WC KUNG*	**Symposium 3B: Controversies in Endocrinology** *(S226 – 227)* *Chairmen: Dr. Annette WK TSO, Dr. CK YEUNG*	
14:30 – 14:55	**Osteoporosis: What Next after Prolonged Bisphosphonate Treatment** Dr. Benjamin YT AU YEUNG	**Prescribing Insulin: Early or Not So Early** Dr. CY YEUNG	**Live USG Thyroid Demo -2** *(S228)* Dr. TW WONG
14:55 – 15:20	**Management of Thyroid Nodule** Dr. KP WONG	**Testosterone Replacement and Cardiovascular Risk** Dr. KK LEE	
15:20 – 15:50	**Tea Break and Exhibition** *(Sponsored by Boehringer Ingelheim)*		
	Plenary Lecture 4 *(S221)* *Chairman: Prof. Kathryn CB TAN*		
15:50 – 16:30	**Treating Hyperlipidemia** Prof. Anthony KEECH		
	Meet the Experts *(S221)* *Panelists: Dr. CH CHOI, Dr. Jason CM NG*	**Meet the Experts** *(S226 – 227)* *Panelists: Dr. Emmy YF LAU, Dr. Jenny YY LEUNG*	
16:30 – 17:10	**Endocrine and Thyroid Case Discussion**	**Osteoporosis and Diabetes Case Discussion**	

** Programme is subject to change without prior notice*

Conference Information & Accreditations

Conference Venue

S221-230, Level 2, Hong Kong Convention and Exhibition Centre

Address: 1 Expo Drive, Wanchai. Hong Kong (Harbour Road Entrance)

Organizing Committee

Dr. YC WOO (Chairman)

Prof. Karen SL LAM

Prof. Kathryn CB TAN

Dr. WS CHOW

Dr. TP IP

Dr. Joanne KY LAM

Dr. Paul CH LEE

Dr. Alan CH LEE

Dr. Eunice KH LEUNG

Dr. David TW LUI

Ms. Elaine LY LEUNG

Ms. SK LEUNG

Ms. Connie HN LOONG

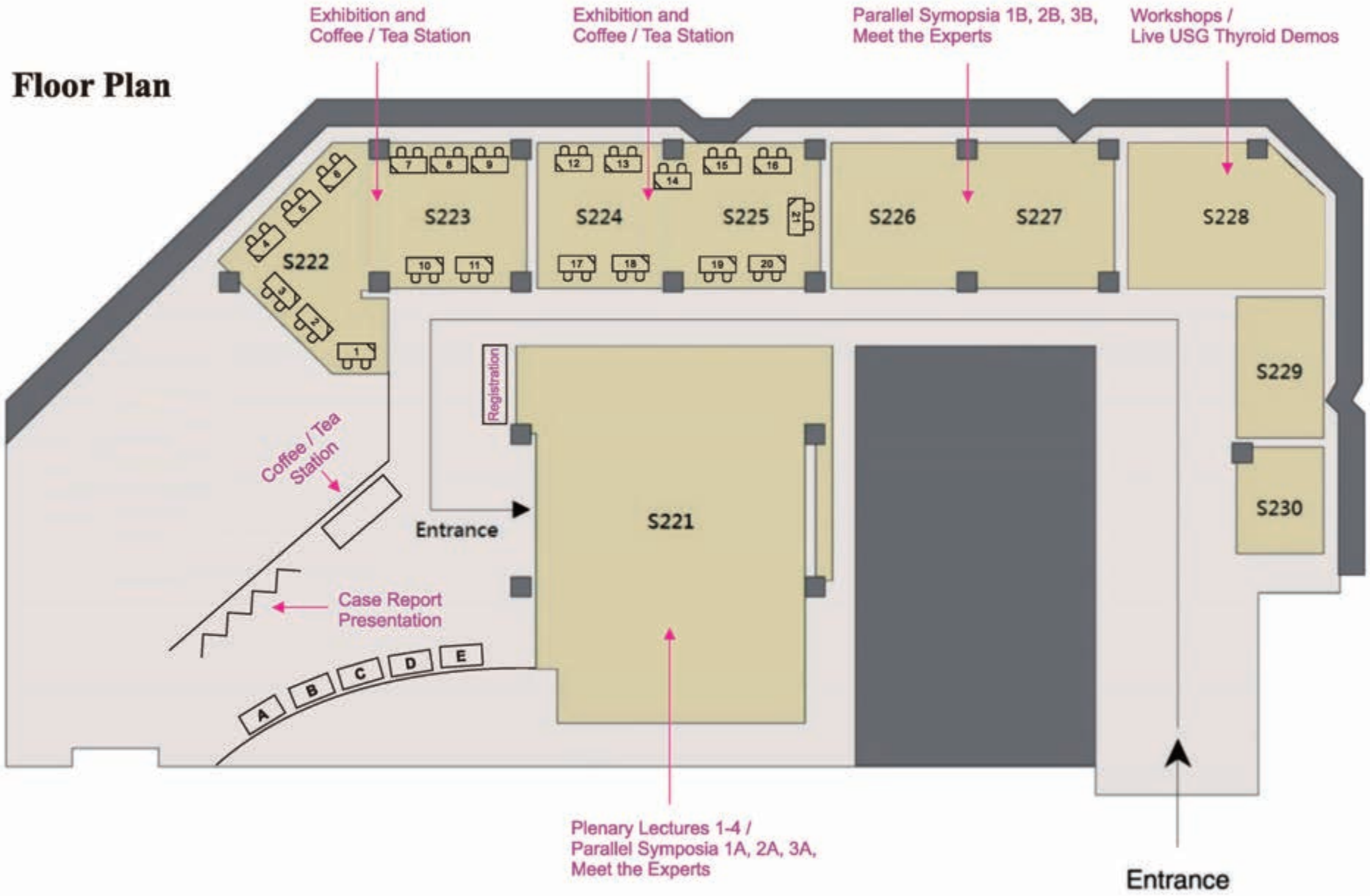
Ms. Karen KC WONG

Academic Accreditations

CME / CNE points have been accredited by the following colleges and programme:

	Max. for whole function	18 November 2018	Category and Remarks
CME			
Hong Kong College of Family Physicians	5	5	OEA-5.2
Hong Kong College of Obstetricians & Gynaecologists	Pending	Pending	Pending
College of Ophthalmologists of Hong Kong	Pending	Pending	Pending
Hong Kong College of Orthopaedic Surgeons	5	5	PP-C
Hong Kong College of Paediatricians	6	6	A-PP
The Hong Kong College of Pathologists	6	6	CME-PP
Hong Kong College of Physicians	6	6	PP-PP
College of Surgeons of Hong Kong	6	6	CME-PP
MCHK CME Programme (HKU)	5	5	CME-PASSIVE
CNE			
Hong Kong West Cluster	6	6	Theory

Floor Plan


Exhibition and Coffee / Tea Station
Exhibition and Coffee / Tea Station
Parallel Symopsia 1B, 2B, 3B, Meet the Experts
Workshops / Live USG Thyroid Demos
S222
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Registration
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Case Report Presentation
A
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C
D
E
Plenary Lectures 1-4 / Parallel Symposia 1A, 2A, 3A, Meet the Experts
Entrance

List of Speakers & Faculty

Dr. Benjamin YT AU YEUNG
Associate Consultant
Department of Medicine
Queen Elizabeth Hospital

Dr. WS CHOW
Consultant
Department of Medicine
Queen Mary Hospital

Prof. Anthony KEECH
Deputy Director
NHMRC Clinical Trials Centre and
Royal Prince Alfred Hospital
The University of Sydney

Dr. Alan CH LEE
Resident Specialist
Department of Medicine
Queen Mary Hospital

Dr. Jenny YY LEUNG
Chief of Service
Integrated Medical Service
Ruttonjee & Tang Siu Kin Hospital

Prof. Socrates PAPAPOULOS
Professor of Medicine, Consultant/Advisor
The Leiden Center for Bone Quality
Leiden University Medical Center

Prof. Kathryn CB TAN
Sir David Todd Professor in Medicine
Department of Medicine
The University of Hong Kong

Dr. Peter WÜRTZ
Scientific Director
Nightingale Health

Dr. Nicole SM CHAU
Associate Consultant
Department of Medicine and Geriatrics
Princess Margaret Hospital

Prof. Per-Henrik GROOP
Professor
Internal Medicine
The University of Helsinki

Dr. Joanne KY LAM
Associate Consultant
Department of Medicine
Queen Mary Hospital

Dr. Paul CH LEE
Clinical Assistant Professor
Department of Medicine
The University of Hong Kong

Dr. David TW LUI
Resident
Department of Medicine
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Prof. Andrew SINDONE
Director of the Heart Failure Unit
Department of Cardiac Rehabilitation
Concord Hospital

Dr. KP WONG
Clinical Assistant Professor
Department of Surgery
The University of Hong Kong

Dr. TW WONG
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Dr. TP IP
Consultant
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Associate Consultant
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Pamela Youde Nethersole Eastern Hospital

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Honorary Clinical Associate Professor
Department of Medicine
The University of Hong Kong

Dr. Jason CM NG
Associate Consultant
Department of Medicine
Queen Elizabeth Hospital

Prof. Sidney TAM
Honorary Clinical Professor
Department of Pathology
The University of Hong Kong

Dr. YC WOO
Consultant
Department of Medicine
Queen Mary Hospital

Dr. CY YEUNG
Honorary Clinical Assistant Professor
Department of Medicine
The University of Hong Kong

Adrenal Incidentaloma

Dr. David TW LUI
Resident
Department of Medicine
Queen Mary Hospital

An adrenal incidentaloma is defined as an adrenal mass detected on imaging not performed for suspected adrenal disease. There is an apparent increase in prevalence of adrenal incidentalomas as a result of increasing utilization and sensitivity of imaging. While majority of adrenal incidentalomas are benign and non-functioning, systematic clinical evaluation is still essential to identify the potentially malignant and/or hormonally hypersecreting ones which warrant appropriate interventions.

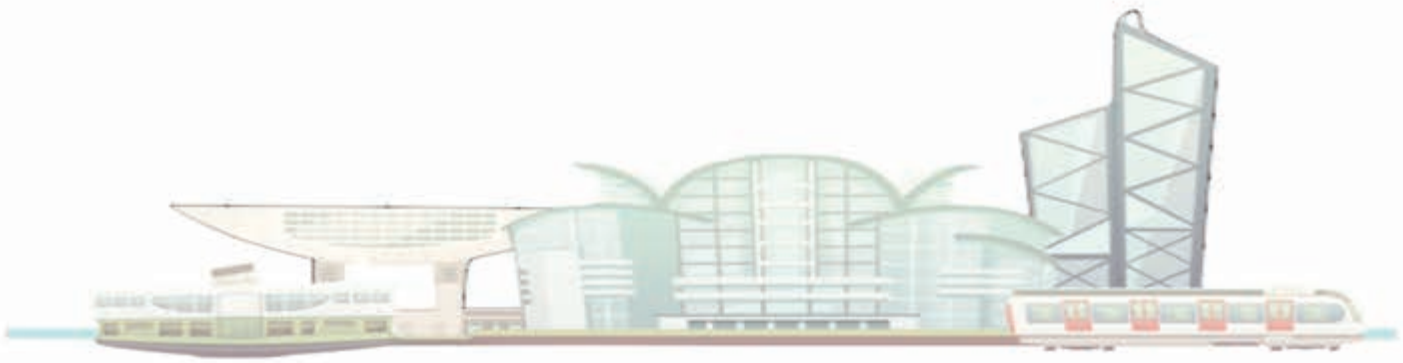
In this symposium, the comprehensive approach in evaluation of an adrenal incidentaloma from its imaging phenotype to the appropriate hormonal assessment will be reviewed. For adrenal incidentalomas which are not surgically removed, a reasonable follow-up strategy is necessary. While regular imaging and hormonal surveillance for years appears to be the safest approach, it may not be the most effective strategy as suggested by recent evidence.

With the recent guideline published by the European Society of Endocrinology, the approach in managing adrenal incidentalomas in our centre, and controversies such as subclinical Cushing's syndrome and sub-centimetre adrenal 'incidentaloma' will be discussed.

Advances in Medical Therapy for Pituitary Tumours

Prof. Kathryn CB TAN
Sir David Todd Professor in Medicine
Department of Medicine
The University of Hong Kong

Medical therapy is playing an increasingly important role in the management of hormone-producing pituitary adenomas. With improved understanding of tumor pathophysiology and biology, novel medical therapies that target specific pathways implicated in tumor synthesis and hormonal over-secretion are being developed. Recent advances in the medical armamentarium for treating functioning tumours including somatotroph adenoma, corticotroph adenoma and lactotroph adenoma will be reviewed. Targeting specific receptors and genes implicated in tumors pathogenesis and determining the predictors of response using radiological, pathological, and clinical characteristics will help in patient selection and enable individualization of therapy. Effective biochemical and "tumor mass" disease control will lead to a reduction in comorbidities and improve prognosis.



Pitfall in Thyroid Hormone Assays

Prof. Sidney TAM
Honorary Clinical Professor
Department of Pathology
The University of Hong Kong

Thyroid function test (TFT) in the general clinical context comprises measurement of thyroid stimulating hormone (TSH), thyroxine (T4) and triiodothyronine (T3) either in total or in the free forms. Direct measurement of the free hormones has gradually eliminated the need for estimation of the free thyroxine indices over the recent decades. The much enhanced functional sensitivity of the recent generations of TSH assays has limited the application of TRH stimulation test to just a few clinical scenarios. The high-sensitivity TSH (hs-TSH) is generally regarded the first-line test for detecting thyroid dysfunctions, especially in the outpatient setting and ambulatory subjects. Thyroid disorders are relatively common endocrine conditions, second only to diabetes mellitus in prevalence, and their clinical presentation may be subtle and protean. TFT is pivotal in the correct diagnosis of thyroid dysfunction and monitoring of its progress.

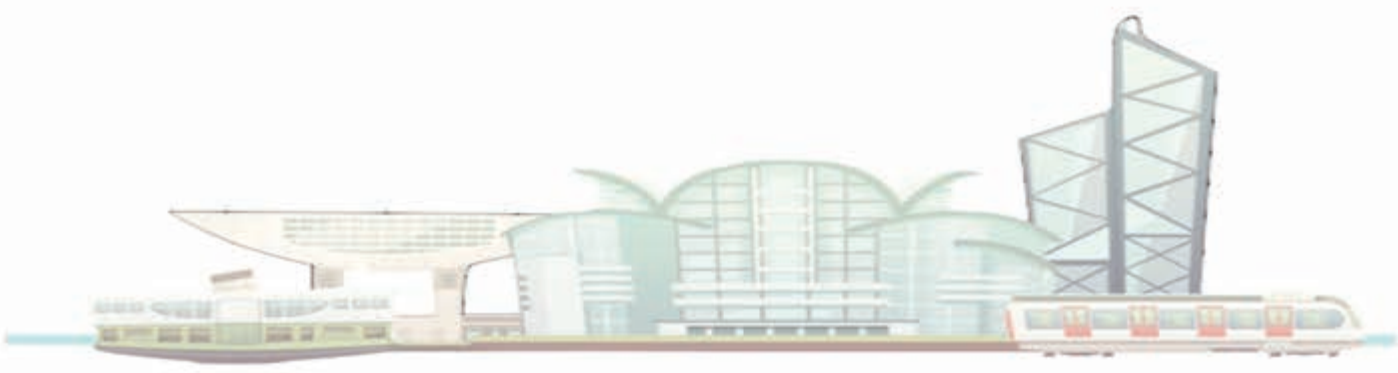
TSH bears a negative log-linear relationship with the free thyroid hormones. This renders it very sensitive in picking up thyroid conditions associated with a genuine increase or decrease in the free hormone levels, i.e., free T4 (FT4) and free T3 (FT3). However, quantitative determination of the free thyroid hormone levels is required in assessing the severity of thyroid dysfunction and monitoring of the disease progression.

The biologically active free fractions of the thyroid hormones constitute only a very small percentage of the hormones in circulation (0.02% of total T4, 0.2% of total T3). Accurate determination of their levels is technically challenging and requires assays with high analytically sensitivity. All authentic free thyroid hormone assays have to rigorously obey the law of mass action. Measurement by equilibrium dialysis coupled with liquid chromatography and mass spectrometry (ED-LC-MS) is the gold standard assay methodology. However, technical complexity, sophisticated instrumentation and low throughput preclude its application in the clinical laboratory setting. The last few decades have seen the advent of various immunoassay-based semi- or fully automated analytical platforms for measurement of the free hormone levels with a much shorter analytical turnaround time that is required to meet clinical needs.

The automated FT4 and FT3 assays adopted by the clinical laboratories in general comprise the "one-step" methods with either labelled hormone analog or labelled antibody, and the "two-step" back-titration methods using immobilized T4 or T3 antibody. Unfortunately these automated assays are less robust than the ED-LC-MS assay and are subject to various interferences. It would be prudent for clinicians to be aware of the potential fallacies and limitations of these assays.

As with immunoassays in general, these automated free hormone assays are vulnerable to interferences that can be analyte-dependent or analyte-independent, resulting in falsely high or low test results. Haemolysis, icterus, lipaemia, effects of anticoagulants and sample storage are examples of analyte-independent interferences, which in fact can be readily observed and controlled. However, analyte-dependent interferences can be evasive and potentially lead to misinterpretation by the unwary. Such interferences may be caused by heterophilic antibodies (e.g., human anti-mouse antibody, HAMA), auto-analyte antibodies, rheumatoid factors, medications with strong protein-binding properties. Besides, some interferences are peculiar to certain assay designs, e.g., biotin, anti-streptavidin antibodies and anti-ruthenium antibodies.

Clinicians should be vigilant and suspect potential interferences in thyroid function testing whenever clinical or biochemical discrepancies arise. Close interaction between the clinicians and the laboratories is necessary to avoid such diagnostic pitfalls.



Special Issues on Management of Thyroid Disorders

Dr. Alan CH LEE
Resident Specialist
Department of Medicine
Queen Mary Hospital

Thyroid disorders are commonly encountered in daily clinical practice. While the treatment of thyrotoxicosis and hypothyroidism comprises of antithyroid drug therapy and thyroxine replacement respectively, there are certain scenarios where the management of thyroid disorders may not be straightforward. In this presentation, we will discuss several special issues regarding the management of thyroid disorders with update on the latest guidelines and recent clinical evidence:

1. ***Use of Antithyroid drugs***
   - Treatment for 18 months – Does this magic number fit all thyrotoxic patients ?
   - Cytopenia and deranged liver function – Review on rare but serious side effects of thionamides (carbimazole / methimazole and propylthiouracil)
   - What should be used when thionamides are contraindicated – Clinical use of lithium in treatment of thyrotoxicosis

2. ***Thyroid disorders and Pregnancy***
   - Adverse consequence of thyroid disorders complicating pregnancy
   - Safety of antithyroid drugs during pregnancy – when to treat and when to observe ?
   - Thyroxine replacement during pregnancy

3. ***Subclinical hyperthyroidim and Subclinical hypothyroidism – Treat or NOT to treat ?***

Getting the Best from Antidiabetic Injectables

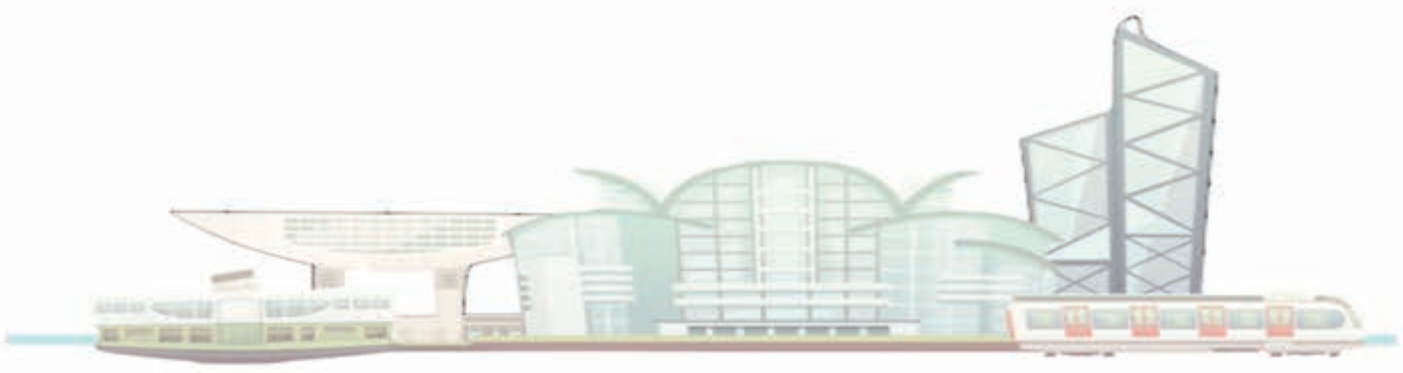
Dr. WS CHOW
Consultant
Department of Medicine
Queen Mary Hospital

The availability of a wide variety of diabetes pharmacotherapies presents an opportunity as well as a challenge to clinicians who manage patients with type 2 diabetes. The opportunity is that it has been easier for a clinician to achieve target glycemic control in patients who are compliant to lifestyle modification and the recommended pharmacotherapies. On the other hand, it poses a challenge to a clinician in choosing the appropriate pharmacotherapies for an individual patient.

The American Diabetes Association / European Association for Study of Diabetes (ADA/EASD) guidelines suggest a combination of metformin and any one of the preferred six treatment options for those patients without underlying atherosclerotic cardiovascular disease (ASCVD), whose A1C target is not achieved after approximately 3 months of metformin monotherapy. These treatment options include sulfonylurea, thiazolidinedione, dipeptidyl peptidase-4 (DPP-4) inhibitor, sodium–glucose cotransporter 2 (SGLT2) inhibitor, glucagon-like peptide 1 receptor agonist (GLP-1 RA), or basal insulin. For patients with ASCVD, clinicians should consider adding a second agent with evidence of cardiovascular benefit, taking into account several drug-specific and patient-specific factors. These guidelines also suggest either basal insulin or GLP-1 RA as the first line injectable pharmacotherapy.

In Hong Kong, there is an array of injectable options available for clinical use, either alone or in combination with metformin or other antihyperglycemic agents. These injectable pharmacotherapies include premixed insulins, basal insulins, co-formulated dual action insulin, daily or weekly (GLP-1 RA), and daily co-formulated basal insulin with GLP-1 RA.

In the lecture, I will discuss the factors that should be considered when choosing an appropriate first line injectable pharmacotherapy for your patients in order to help them to achieve an optimal glycemic control in an efficient way. The utilization of pharmacokinetic and pharmacodynamic properties of various injectable pharmacotherapies in matching them with specific clinical situations will also be highlighted.



DM: Use of CGMS

Dr. Nicole SM CHAU
Associate Consultant
Department of Medicine and Geriatrics
Princess Margaret Hospital

At home, we encourage diabetic patients to perform self-monitoring of blood glucose (SMBG). SMBG provides immediate and accurate data of blood glucose that helps daily diabetic management. It empowers patients to achieve glycemic control targets, and help physicians to optimize treatment regime while avoiding hypoglycemia. However, the pain due to finger pricks and the cost of test strips and devices are the biggest hurdles in encouraging patients to do SMBG. Furthermore, it requires multiple testing at various time points during the day to obtain a complete profile for evaluation.

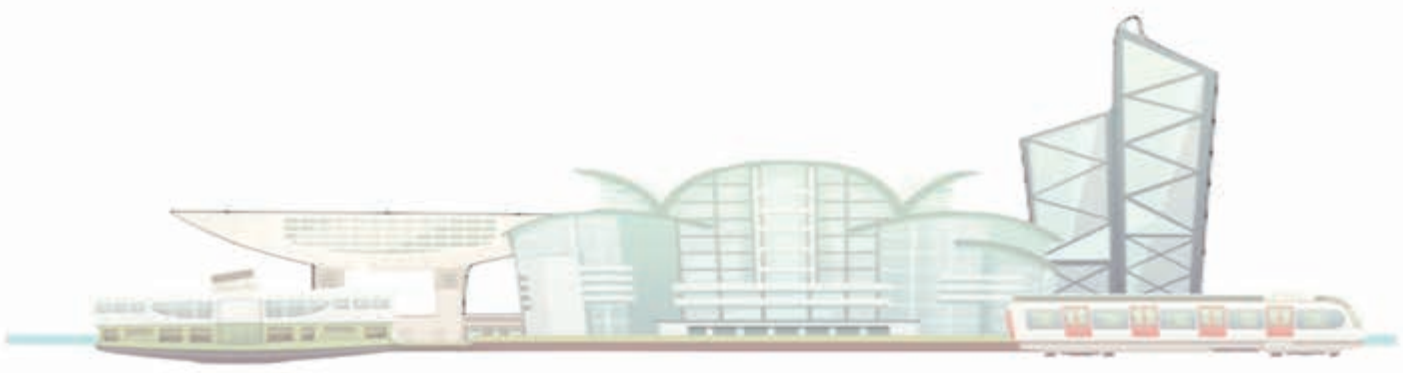
Since the year 2000, the continuous glucose monitoring (CGM) device has become commercially available. The CGM device provides a 24/7 coverage of instantaneous real-time display of glucose level, not only showing the rate of change of glucose, but it is also accompanied with alerts and alarms for hyper- and hypoglycemia. With the advancement of modern technology, CGM devices now become smaller, lighter, more accurate, and more user friendly. Software for data analysis helps demonstrating the day-to-day glucose variability, and especially benefits the management of patients with nocturnal hypoglycemia and hypoglycemic unawareness. Randomized controlled trails (RCTs) show that CGM can reduce HbA1c and time spent in hypoglycemia. Recent emergence of a flash glucose monitoring (FGM) system uses factory calibration which allows patients to scan for their glucose levels without the need of finger pricks. The Ambulatory Glucose Profile (AGP) generated by FGM also aids display and analysis of retrospective data.

Moreover, CGM used in combination with insulin pump therapy in Type 1 DM patients provides suspension of insulin infusion with threshold or predictive low glucose values. It is also a crucial component of the close-loop system in the future development of artificial pancreas.

Hyponatraemia

Dr. Paul CH LEE
Clinical Assistant Professor
Department of Medicine
The University of Hong Kong

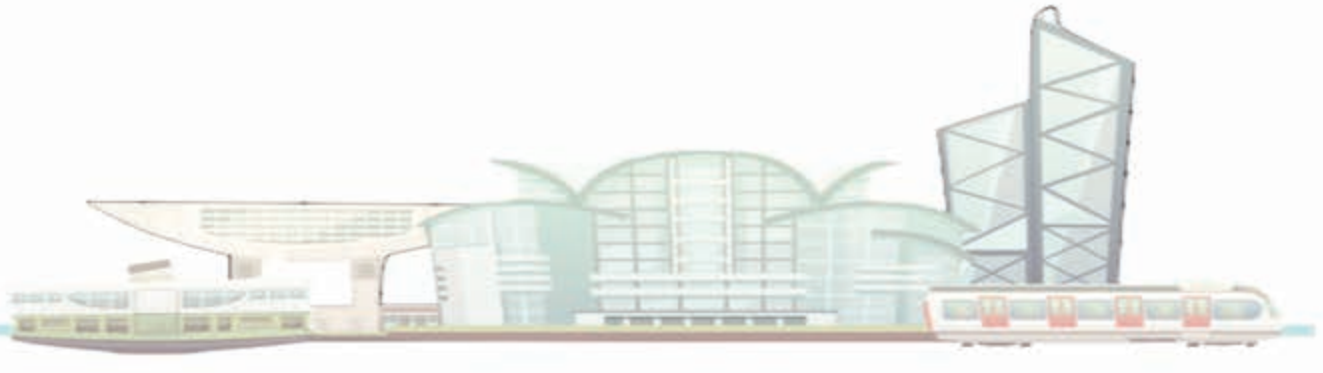
Hyponatraemia is one of the commonest electrolyte disturbances seen in hospitalized patients. While management of hypovolaemic and hypervolaemic hyponatraemia are relatively straight-forward, euvolaemic hyponatraemia often poses both diagnostic and therapeutic challenge to clinicians. Glucocorticoid deficiency and severe hypothyroidism should be excluded in euvolaemic hyponatraemia. While acute symptomatic hyponatraemia requires urgent correction to avoid brain herniation, overly rapid correction of chronic hyponatraemia could lead to morbidity and/or mortality as a consequence of osmotic demyelination syndrome, especially in high risk patients including those with serum hyponatraemia ≤120 mmol/L, hypokalaemia, advanced liver disease, alcoholism and malnutrition. Vaptans are vasopressin receptor antagonists that selectively promote renal free water excretion and are useful agents for management of hyponatraemia. In this short talk, management guidelines of hyponatraemia will be presented, focusing on the roles of vaptans in clinical use. Moreover, re-lowering strategies in case of overcorrection will also be briefly discussed.



Diabetes and Bone

Dr. YC WOO
Consultant
Department of Medicine
Queen Mary Hospital

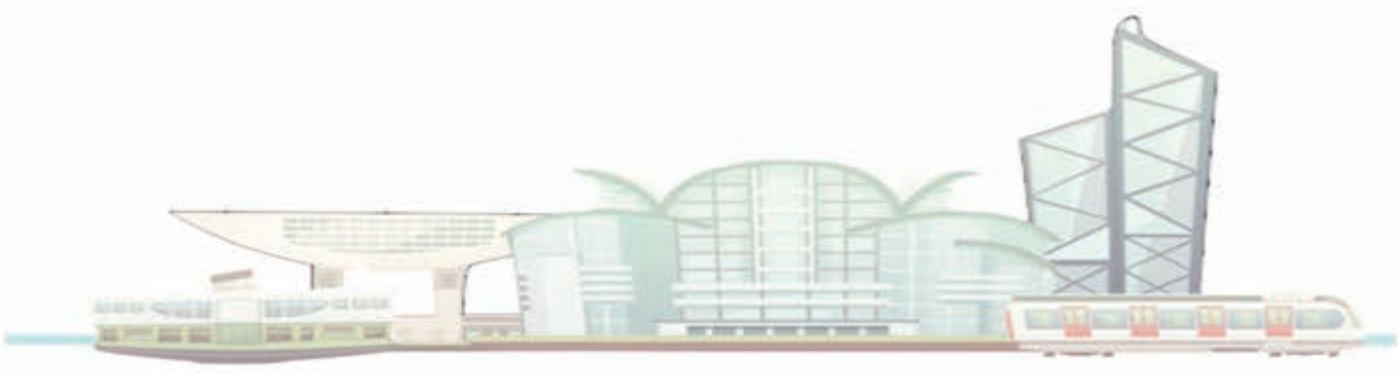
The increasing prevalence of diabetes worldwide is indisputable. Apart from vascular complications, fragility fractures are increasingly recognized as a complication of both type 1 (T1DM) and type 2 (T2DM) diabetes. In contrast to T1DM patients who usually have lower bone mass, those with T2DM may have higher bone mineral density (BMD) levels than persons without diabetes, independent of gender or body mass index. The increased risk of fracture in T2DM individuals is therefore not resulted from a lower bone mass but a poorer bone quality with a highly complex and heterogeneous underlying molecular pathophysiology involving hormonal, immune, and genetic pathways. Antidiabetic agents have also been linked with increased fracture rates. Despite the known increased fracture risk in diabetes individuals and the resulting significant health impact, fracture risk assessment is not yet included to diabetes complication screening program. Nonetheless, the commonly used screening tools that help to evaluate bone health have their limitation as T2DM patients fracture at relatively normal BMD and the FRAX® tool does not include T2DM as one of the risk factors.



Approach to Patients with Secondary Osteoporosis

Dr. Joanne KY LAM
Associate Consultant
Department of Medicine
Queen Mary Hospital

Osteoporosis is characterized by decreased bone mass and microarchitectural changes in the bone that increase the susceptibility to fracture. Secondary osteoporosis is loosely defined as osteoporosis caused by an underlying disease and/or medication. The prevalence of secondary osteoporosis in patients with newly diagnosed osteoporosis, or a recent fracture is highly variable, ranging from 3% to 55%, depending on patient selection, type of fracture and extensiveness of the assessment. Clinical conditions that are highly suspicious of secondary osteoporosis include fragility fractures in premenopausal women or younger men, very low bone mineral density (BMD) values and fractures despite anti-resorptive therapy. The initial assessment of patients presenting with osteoporosis should include a detailed history and physical examination, combined with first-line laboratory tests to identify risk factors for fractures, medications that cause bone loss and possibly underlying endocrine, gastrointestinal or rheumatological diseases. Glucocorticoids, male hypogonadism and vitamin D deficiencies are among the commonest recognized causes of secondary osteoporosis. Recognizing secondary causes in osteoporosis is important, as treatment of the underlying disease might improve the bone density and decrease the risk of fracture.



Combination and Sequential Therapies in the Management of Osteoporosis

Prof. Socrates PAPAPOULOS
Professor of Medicine, Consultant/Advisor
The Leiden Center for Bone Quality
Leiden University Medical Center

The imbalance between bone resorption and bone formation at the bone tissue, that constitutes the pathophysiological basis of osteoporosis, provides the rationale for the use of interventions that either reduce bone resorption and turnover or stimulate bone formation in the treatment of patients with the disease. Evidence for efficacy and safety from controlled studies has been obtained for up to 10 years for the antiresorptive agents alendronate and denosumab and up to 2 years for the bone forming agents teriparatide and more recently abaloparatide. For patients, however, with severe osteoporosis more efficacious treatments are needed. Combination therapies, a common approach in the treatment of other chronic diseases, have been explored but results of studies combining bisphosphonates with PTH have been disappointing. In contrast, combination therapy of teriparatide with denosumab, that has a different mechanism of action and is more potent than bisphosphonates, induces different responses characterized by larger increases in BMD, estimated bone strength and microarchitecture than either monotherapy alone. However, fracture data are not yet available. A more attractive and mandatory approach is the sequential administration of bone forming agents followed by antiresorptive agents. In clinical practice of particular interest is the switch from one to another antiresorptive agent. For example, administration of denosumab after treatment with oral or intravenous bisphosphonates induces greater increase in BMD at all skeletal sites, while administration of bisphosphonates after discontinuation of denosumab is mandatory to prevent the rapid rebound of bone remodeling. Recent studies with sclerostin inhibitors, anabolic agents that increase bone formation but also reduce bone resorption, could be an excellent option in the future for patients with severe osteoporosis.

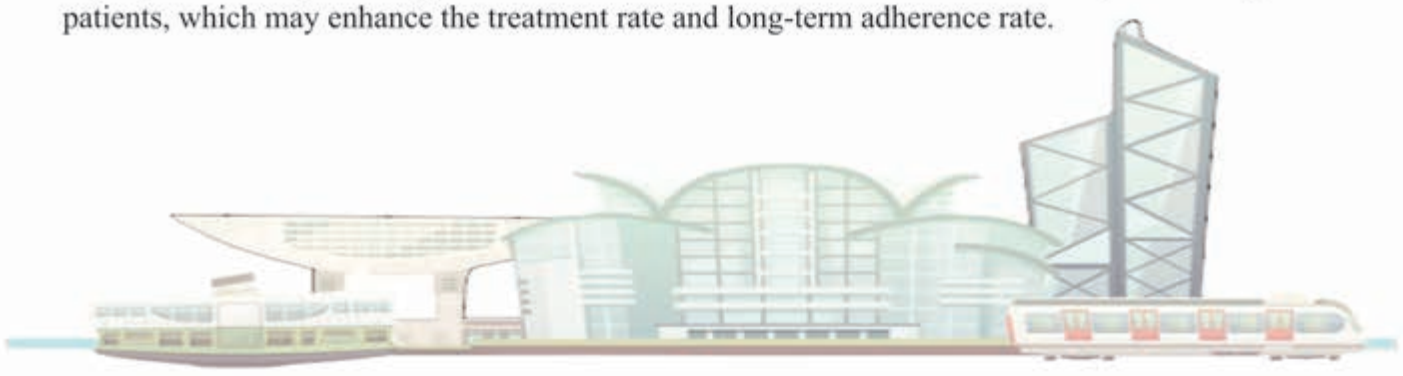
Anti-Osteoporosis Drugs – How to Choose?

Dr. TP IP
Consultant
Department of Medicine
Tung Wah Hospital

Alendronate is the first anti-osteoporosis drug that was approved by the FDA of the United States in the year 1995 for the treatment of postmenopausal osteoporosis. The following five years marked a period of very rapid advance in the therapeutics in the osteoporosis field in which six more anti-osteoporosis drugs came into clinical use from 1995 to 2000, namely, by order of their sequence of approval, raloxifene, risedronate, teriparatide, ibandronate, strontium ranelate and zoledronic acid. The relative newer drug, denosumab, was approved in 2010. The mechanisms of action of these drugs range from the different modes of antiresorptive to bone-forming actions. Alongside with development of these new drugs, a considerable number of guidelines were also developed from different international, regional, and local authorities including the Osteoporosis Society of Hong Kong which published a local guideline in 2013 for the management of postmenopausal osteoporosis for local clinicians.

Despite availabilities of these guidelines, the proportion of patients at high risk of fragility fracture being treated with an anti-osteoporosis drug remained low. At most 25% of these patients were reported to have received anti-osteoporosis treatment in published studies in different countries. Even in patients started on treatment, the long-term adherence to therapy had also been far from satisfactory.

One of the weaknesses of the published guidelines was that all the available anti-osteoporosis drugs in clinical use were listed without a particular reference for a sensible choice for an individual patient. In fact, the choice of an appropriate drug for an individual patient at different levels of fracture risk poses an important clinical challenge. A patient-centred approach taking into consideration of the age of the patient, the co-morbid medical illnesses, the anti-fracture efficacy and the potential adverse effects of the individual drug, the affordability for the medications and most importantly the preference of and acceptance by the patient. Based on the published literature data on the anti-fracture efficacy of the individual drug in different patient populations and its potential long-term effects, a practical algorithm is proposed as a guide to general clinicians in the selection of an anti-osteoporosis drug for their patients, which may enhance the treatment rate and long-term adherence rate.

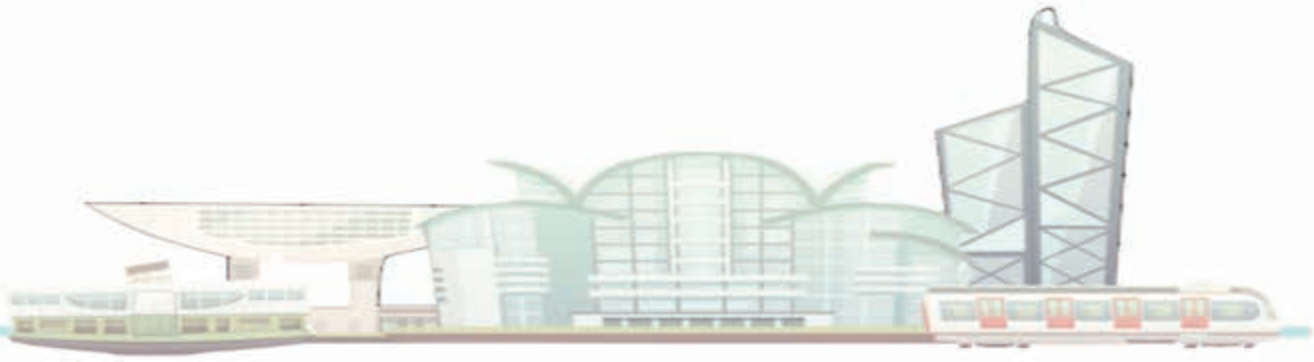


DECLARE: What is the Impact to Our Existing Clinical Practice?

Prof. Andrew SINDONE
Director of the Heart Failure Unit
Department of Cardiac Rehabilitation
Concord Hospital

Glucose lowering medications for patients with type 2 diabetes mellitus (T2DM) are able to reduce the incidence of microvascular complications of T2DM but up until recently, no glucose lowering agent was able to reduce macrovascular events or cardiovascular mortality. The EMPA-REG outcomes study using a Sodium Glucose Transporter 2 (SGLT2) inhibitor was the first study to improve survival with a glucose lowering agent. Subsequently, the CANVAS studies also showed a reduction in the composite of heart failure hospitalisation and cardiovascular mortality and the CVD REAL studies showed similar reductions in mortality and heart failure hospitalisations in large population in phase 4 post-marketing surveillance case matched control studies.

These two prior randomised controlled trials were mainly in patients who had prior cardiovascular events or renal impairment or other markers of increased cardiovascular risk. The results of the landmark DECLARE study go beyond these results. This study showed benefits in patients with prior cardiovascular events and in patients who simply had high cardiovascular risk. The DECLARE study, using dapagliflozin, had a number of subjects which was the sum of the two other randomised trials using SGLT2 inhibitors and further cements the key role of these agents in not only reducing blood glucose levels but also cardiovascular mortality and heart failure hospitalisations. This information implies that all patients with T2DM who have no contraindications should be strongly considered to be initiated on an SGLT2 inhibitor, not only to reduce blood glucose levels and microvascular events but also to improve cardiovascular mortality and heart failure hospitalisation.



SGLT2 and DPP4 Inhibitors: From Cardiovascular Outcome Trials in Diabetes to Clinical Implications

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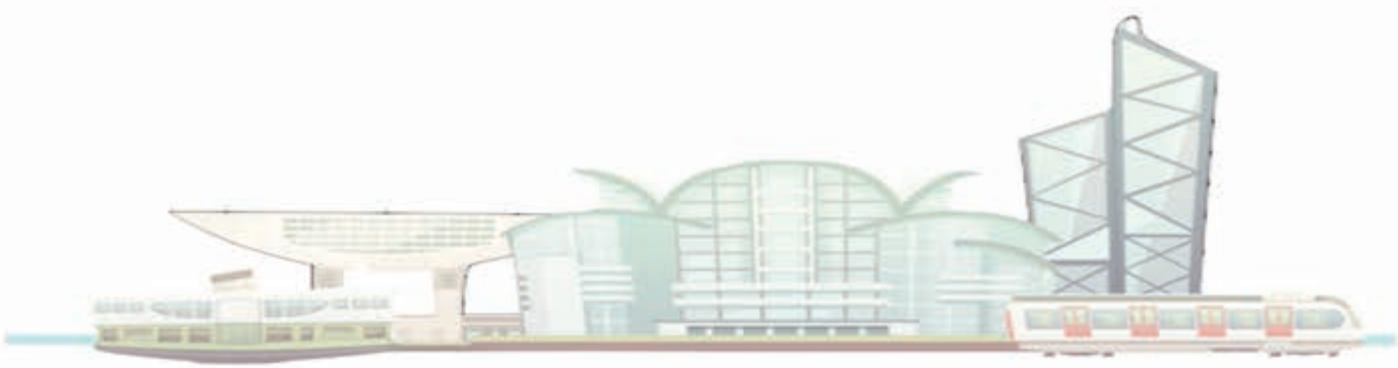
Internal Medicine
The University of Helsinki

Cardiovascular disease is the leading cause of morbidity and mortality among patients with type 2 diabetes, since regulatory agencies has mandated assessment of cardiovascular safety of new antidiabetic agents, there have been a considerable number of cardiovascular outcome trials (CVOT) being released.

We summarize the major cardiovascular outcome trials of oral antidiabetic agents completed so far which includes both classes of dipeptidyl peptidase-4 inhibitors (DPP4i) and sodium-glucose cotransporter-2 inhibitor (SGLT2i). As the most recent addition to the therapeutic armamentarium for T2DM, SGLT2i in particular empagliflozin was found not only to reduce the primary composite outcome 3P-MACE driven by significant reduction of CV mortality, in addition, all-cause mortality as well as hospitalization for heart failure (HHF), in the recent analysis using data from the EMPA-REG OUTCOME trial and actuarial methods, empagliflozin was estimated to improve survival by 1 to 5 years in patients with type 2 diabetes and established CV disease.

On the other hand, the most recently released DPP4 inhibitor CV outcome trial CARMELINA, which evaluate the impact of linagliptin versus placebo on CV and kidney safety had demonstrated not only long-term CV safety profile but also reassuring long-term kidney safety profile.

Given the high prevalence of cardiovascular disease among individuals with diabetes, it is important to weight the benefits of oral anti-diabetic agents against their cardiovascular safety, as suggested by the recent consensus of European Association for the Study of Diabetes (EASD) and American Diabetes Association (ADA), antidiabetic agent with proven cardiovascular benefit should take precedent when in consideration of medication choices in T2DM patients with established CV disease.



Osteoporosis: What Next after Prolonged Bisphosphonate Treatment

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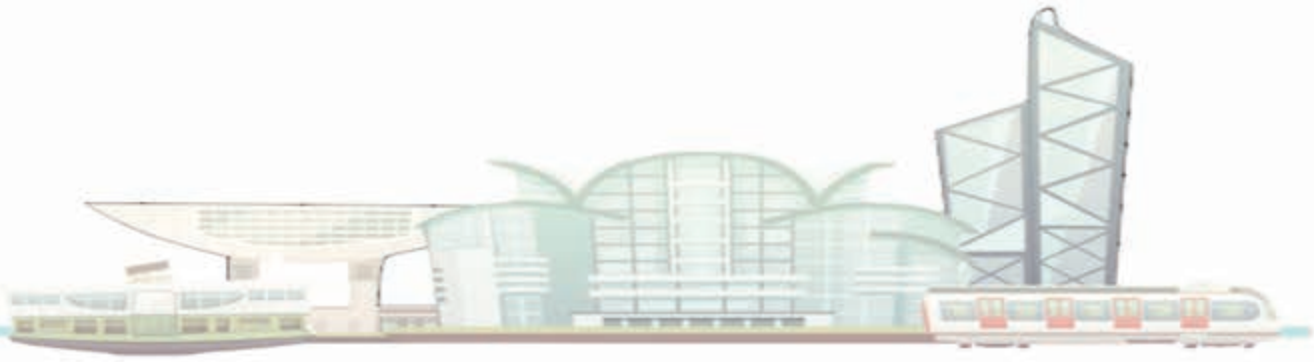
Bisphosphonates are the most commonly used medication for osteoporosis. Long term studies include Fracture Intervention Trial Long term Extension (FLEX) and HORIZON extension study has proven the safety use of Alendronate for 10 years and Zoledronic Acid for 6 years together with data on vertebral fractures reduction. However, the associated rare but clinically serious side effects include osteonecrosis of the jaw (ONJ) and atypical femoral fractures (AFFs) are still a concern. ASBMR Task force suggest drug holiday for the low risk post-menopausal women treated with more than 5 years oral or more than 3 years intravenous bisphosphonates. Bisphosphonates can be considered to continue up to 10 years for the high risk group of patients.

Persistence of beneficial effects was noted after discontinuation of long term bisphosphonate use. The duration of residual anti-resorptive effect depends of type of bisphosphonate. Side effects risk of ONJ and AFF drops after discontinuation of bisphosphonates. Bone mineral density (BMD) or bone turnover markers should be monitored during drug holiday.

Switching to Denosumab was associated with greater increase in BMD than continue taking bisphosphonates. Switching to anabolic agent, teriparatide showed blunting in BMD increase. An investigational anti-sclerostin monoclonal antibody, Romosozumab showed better BMD increase in spine and hip than teriparatide in post-menopausal women with osteoporosis transiting from oral bisphosphonate therapy. Currently there is no guideline on long term bisphosphonate use and it is unlikely that future trials will provide data for formulating definitive recommendation. Decision on resuming of bisphosphonate or switching to other alternative drugs should be individualized balancing between the risk of fracture, side effects and benefits of therapy.



Mangement of Thyroid Nodule

Dr. KP WONG
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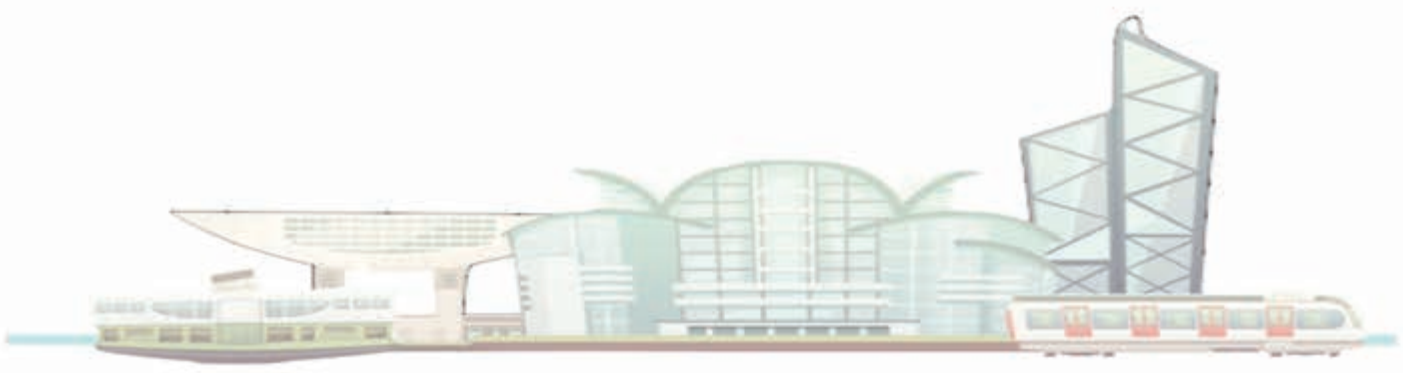
According to a population-based ultrasound screening study, up to 55% of general population who aged between 30 and 70 have thyroid nodules. However, only 3% required surgical intervention after thorough investigations. Therefore, it is crucial to differentiate benign from malignant thyroid nodule. Ultrasound examination of thyroid gland is the mainstay first-line investigation for thyroid nodule. By evaluating the size and presence of suspicious sonographic features, like hypo-echogenicity, ill-defined margin, calcification and tall lesion, clinicians can identify the suspicious nodules and decide the subsequent investigation and management.

Thyroidectomy through a collar incision is a historical and well-adopted approach to achieve the cure for thyroid nodule. However, scar over anterior neck and occasional keloid formation make the conventional approach unpleasant for patients with cosmetic concern. With increasing demand on better cosmesis and minimally invasive treatment, local ablative therapies for thyroid nodule have been developed. Ethanol ablation, radiofrequency ablation, high intensity focused ultrasound ablation, microwave ablation and laser ablation were either chemical or thermal ablative treatment. These ablative techniques help in decreasing the volume and mass effect of the nodule and thus lessen the obstructive symptoms. However, these thyroid nodules were seldom ablated completely and confirmatory histological assessment was not available. To excise the nodule while avoiding a scar at the neck, remote access endoscopic thyroidectomy have been described. Rather than making the incision at the neck, incisions were made at axilla, areola, or inside the oral cavity. A subcutaneous tunnel was then made to operate on the thyroid gland. Through these approach, there would not be any scar at the exposed region. In this lecture, update on diagnostic imaging and fine needle aspiration cytology will be covered. Update and review on ablative treatment and endoscopic thyroidectomy will be discussed.



Prescribing Insulin: Early or Not So Early

Dr. CY YEUNG
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Department of Medicine
The University of Hong Kong

Type 2 Diabetes Mellitus is a progressive disease. Beta-cell function declines progressively after diagnosis and significant proportion of patients requires insulin treatment after a decade. The existing treatment algorithms adopt a stepwise approach. Insulin therapy is recommended for patients with severe hyperglycaemia on presentation (HbA1c ≥10%, fasting glucose ≥13.3 mmol/L, random glucose ≥16.7 mmol/L or marked osmotic symptoms) or when there is failure to achieve glycaemic targets with several non-insulin agents. The role of insulin therapy between these two extremes is less well-defined. The early use of insulin to reduce the risk of long term complications was investigated in the ORIGIN study. 12537 patients with dysglycaemia including pre-diabetes and early type 2 diabetes were randomized to receive either insulin glargine or placebo to achieve fasting glucose of ≤ 5.3 mmol/L. After a median follow up of 6.2 years, cardiovascular outcomes were similar in both treatment arms. Neutral effects were shown also in the 2.5 years extension study ORIGINALE. These findings can only declare safety of early insulin treatment but cannot substantiate a recommendation for routine treatment care.

On the contrary, emerging data in the past decade suggest an early intensive insulin therapy for 2 to 3 weeks, at the diagnosis of type 2 diabetes, may induce disease remission for up to one to two years in nearly half of the patients. Intensive insulin therapy to achieve near-normal glycaemia has been shown to break the gluco-lipotoxicity, improve beta-cell function, reduce insulin resistance as well as other benefits like reducing inflammatory markers, increasing adiponectin and fasting GLP-1 level and improving endothelial function. Intensive treatment in forms of continuous subcutaneous insulin therapy (CSII) or basal-bolus insulin therapy is superior to oral agents in achieving normoglycemia in short duration and can induce sustained disease remission in more patients at 1 and 2 years of follow up. More studies are required to define the best maintenance therapies eg. metformin, intermittent intensive insulin therapy or GLP-1 analogues etc, after the induction of disease remission. Whether intensive insulin therapy at the time of diagnosis of type 2 diabetes will change the treatment paradigm in the future remained to be seen.

Testosterone Replacement and Cardiovascular Risk

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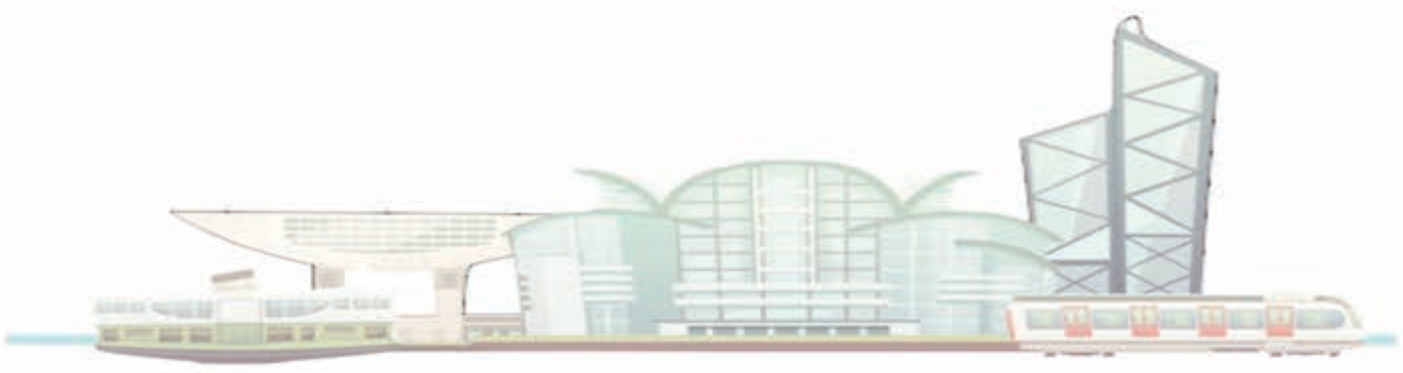
The University of Hong Kong

Male sex hormone is essential for sexual life, musculoskeletal health and the feeling of wellbeing in a male. Restoring testosterone to normal level will improve libido, sexual function, and vitality of a hypogonadal male. Epidemiological studies have shown that low serum testosterone levels were associated with increased cardiovascular morbidity and mortality. Combined with the relationships between testosterone and cytokines, vascular reactivity, haemostatic factors, and cholesterol, the effect of testosterone replacement on the cardiovascular system will be difficult to predict. There are recent trials showing that testosterone replacement therapy will increase cardiovascular risk, at least in high risk males. During the talk, the pros and cons and evidences of testosterone replacement to cardiovascular risk will be visited.



Treating Hyperlipidaemia

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NHMRC Clinical Trials Centre and Royal Prince Alfred Hospital
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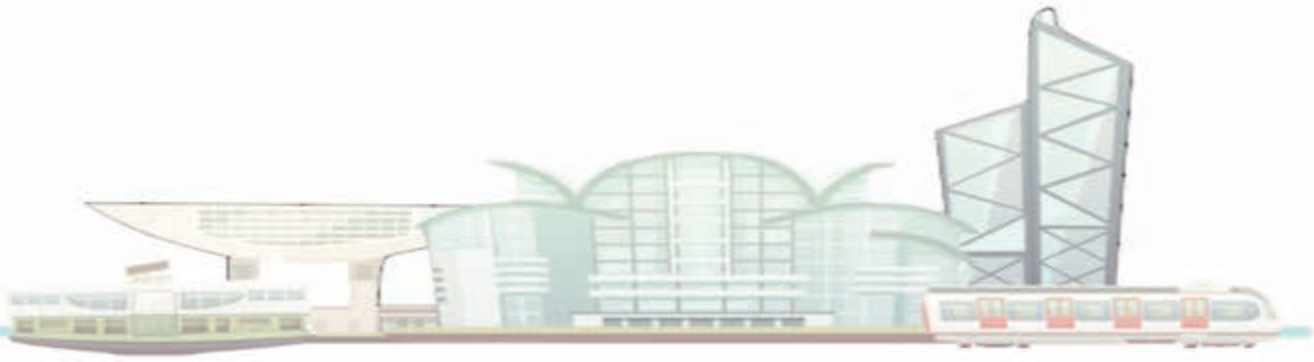
Background: There is a strong log-linear association between higher cholesterol levels, particularly LDL-C levels, and increased cardiovascular (CVD) risk in all populations. Mendelian randomisation studies support higher triglyceride levels, butd not HDL-C, also being directly involved in higher CVD risk. Strategies to treat high lipid levels, or to lower average lipid levels in high risk individuals, have been extensively evaluated over the last 30 years.

Method: Results from individual randomised trials, and from meta-analyses of trials, will be presented. Some basic science will be reviewed.

Results: Statin therapy has become the mainstay of lipid treatment globally. Higher doses lower LDL-C levels more, and are more effective to reduce CVD. The addition of Ezetimibe appears to offer modest additional clinical benefit, particularly in the setting of diabetes. Fibrates also reduce risk, but predominantly in individuals with so-called dyslipidaemia (high TG and/or low HDL-C). The newest agents available clinically, the PCSK9 inhibitors, offer further profound reductions in LDL-C with no important apparent side-effects, with further meaningful reductions in CVD and possibly even in death rates. LDL-C levels below 1.0 mmol/L have been achieved in the recent FOURIER and ODYSSEY trials, and changes to current guidelines are being made to reflect these latest results. Costs of access have however been an issue until recently. Other treatments have been less successful, including the use of niacin and CETP inhibitors, both of which have largely been abandoned for future clinical practice. Novel strategies, including high-dose fish oils, other TG-lowering therapies, targeting lipoprotein (a), anti-senses to both PCSK9 and Apo CIII synthesis and others are now being evaluated in clinical research trials.

Conclusions: Great progress has been made in understanding the molecular pathways involved in the synthesis of blood lipids, and novel treatments will arise. In the meantime, numerous strategies are already available to treat our current patients, which should be tailored to the individual, based on their risk profile and characteristics.



Supporting Organizations

香港糖尿科護士協會
Association of Hong Kong Diabetes Nurses

Diabetes HongKong

Hong Kong Obesity Society
香港肥胖學會

Hong Kong Society of Endocrinology, Metabolism and Reproduction

OSHK
香港骨質疏鬆學會

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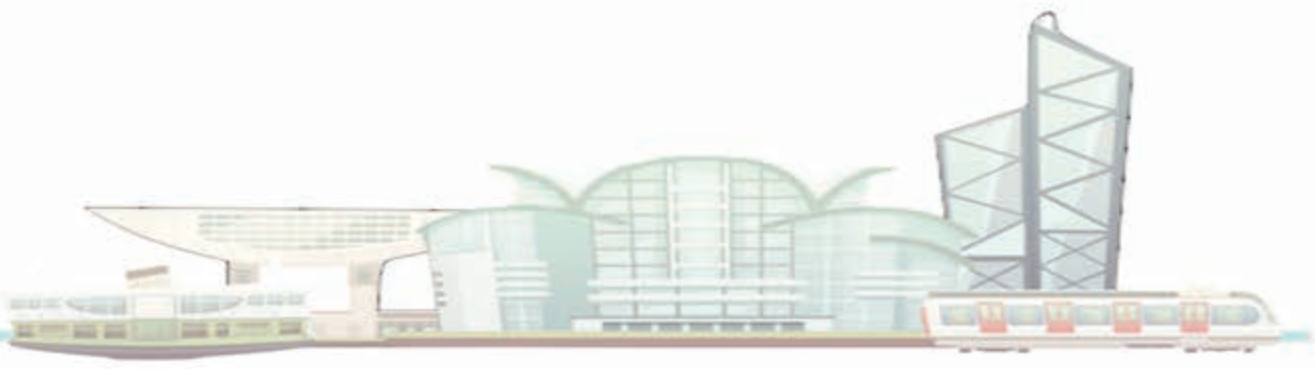

Acknowledgement