HKSTP MedTech Co-create *in Action*

Talk Series on Biomedical Technologies - in Collaboration with HKMA

What are the latest technologies in precision medicine and their clinical applications – especially with genetic testing and digital technologies? Want to hear from doctors their first-hand experience and insights on their clinical needs? Have some great ideas and looking for partners to co-create and ride on the trend of precision medicine? Come join us for this MedTech Co-create lecture series!

This Continuing Medical Education (CME) lecture series – brought to you by HKSTP MedTech Co-create Program in collaboration with Hong Kong Medical Association (HKMA) – aims to provide medical professionals and technology providers with updates on recent advances in precision medicine, and to provide a platform to stimulate exchanges and collaborations. More technology innovations will be showcased in the series – including use of novel biomarkers and genetic testing to predict diseases and treatment outcomes, and "-omics" data and healthcare analytics to improve health and wellbeing.

Talk Series

December 2021

Artificial intelligence in healthcare industry and its clinical applications

Supported by: Imsight Technology

Abstract

Artificial intelligence (AI), especially deep learning with multiple levels of feature representation, has dramatically improved the state-of-the-art recognition performance in many domains including speech recognition, visual recognition, and natural language processing. Despite breakthroughs in above domains, its application to medical image analysis remains yet to be further explored. This talk will share the progress on developing advanced AI techniques and applications for medical image analysis including volumetric deep learning for high-dimension image analysis, human-in-the-loop collaboration, weakly deep learning for scalable pathology image analysis, etc., with an in-depth dive into predictive, diagnosis and prognostic applications covering X-ray/CT/MRI/ultrasound in radiology, OCT in ophthalmology and whole-slide image in pathology. To further unleash the power of AI integrated into clinical scenarios, future promises and pitfalls will also be discussed. Practical application of AI-driven medical tools will also be demonstrated during the talk to showcase how AI adoptions can benefit healthcare providers.

January 2022

Applications of Pharmacogenomics Tests in The Community Healthcare Setting

Supported by: Codex Genetics

Abstract

This talk was designed for continued education of clinicians/pharmacists who are interested in clinical Pharmacogenetics, based on a recent lecture delivered by Prof. Bani Tamraz (PharmD./Ph.D., UCSF) in collaboration with Codex. If you are interested in knowing more about pharmacogenetics (PGx), or deal with questions related to PGx test results, commercial or otherwise, then this presentation will be of interest to you.

The role of clinicians/pharmacists in PGx research, education, and implementation is becoming increasingly important as this field rapidly evolves. The objective of this talk is to provide pharmacist/clinicians a more in-depth analysis of most recent evidence in support of specific clinical guidelines associated with 4 commonly used medications among patients in Hong Kong: tacrolimus, simvastatin, escitalopram and clopidogrel. Furthermore, the presentation will discuss the prevalence of actionable PGx variants among Hong Kong Chinese, providing the audience with potential clinical impact of PGx guided medication treatment in this population in general and for these four medications specifically.

February 2022

Gut Microbiome Diagnostics and Therapeutics in Atopic Dermatitis

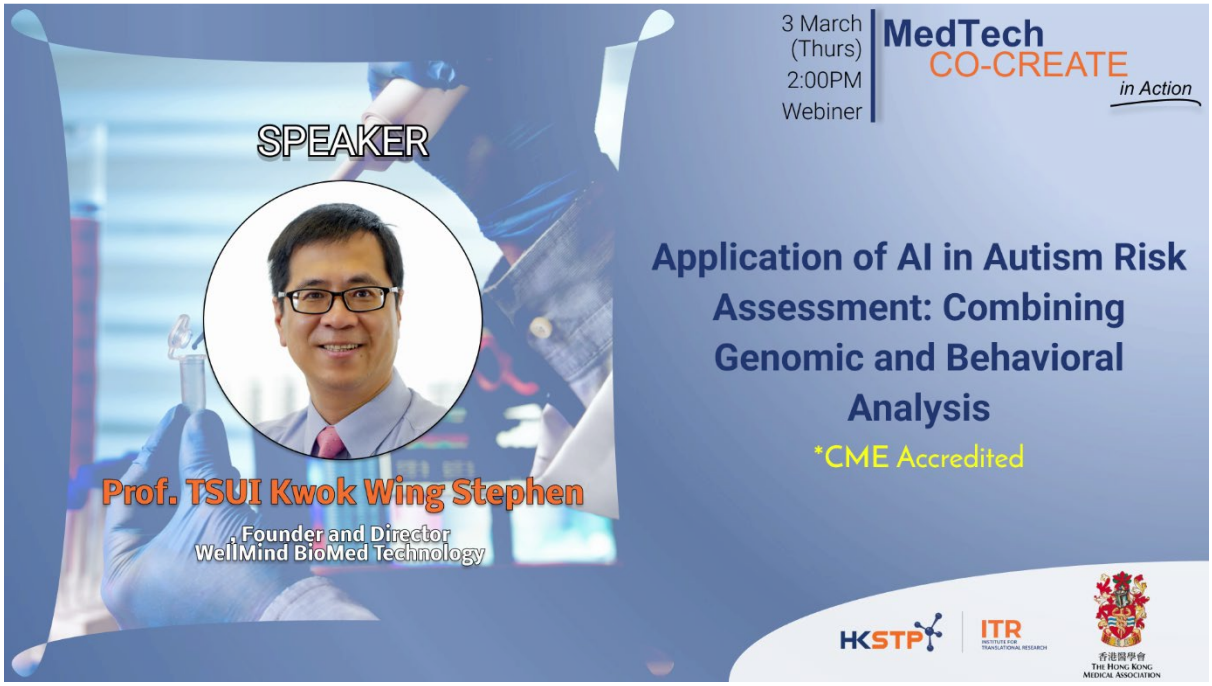
Supported by: [Biomed Technology Holdings Limited]

Abstract

Atopic dermatitis (AD) is a common chronic inflammatory skin disease with a worldwide prevalence of approximately 10–20% in children and 2–5% in adults. This distressing “itching disease” can have tremendous physical and quality-of-life impacts on both patients and their family members. The incidence of atopic diseases has increased over the last few decades, especially in industrialized countries, suggesting that a modern lifestyle is one of the major contributing factors to this global epidemic.

The Hygiene Hypothesis, proposed 3 decades ago, stated that reduced exposure to microbes in early childhood affects the natural development of the immune system or immune tolerance, resulting in increased susceptibility to allergic diseases. In recent years, there has been increasing interest in the role of the intestinal microbiota in the disease development of AD. The gut microbiota is involved in regulating a wide range of physiological processes, such as metabolic-endocrine functions, immunological development and regulation, and biosynthesis of various compounds including short-chain fatty acid (SCFA) and neuromediators. Dysbiosis of the human gut microbiota during early childhood have been shown to be a risk factor for a wide range of chronic diseases, including allergies, autoimmune diseases, metabolic diseases, neuropsychiatric disorders, irritable bowel syndrome and inflammatory bowel disease. Implication of gut microbiota in the development of atopic dermatitis and its potential therapeutic direction will be discussed during the presentation.

March 2022



Application of AI in Autism Risk Assessment: Combining Genomic and Behavioral Analysis

Supported by: [WellMind BioMed Technology]

Abstract

WellMind BioMed Technology Holdings Limited is a research-focused firm that accelerates the frontier of early detection for autism spectrum disorders (ASD). Our vision at Wellmind is to provide affordable, accessible, and accurate services that aids in the early screening of high-risk autistic children and to improve the quality of life of those afflicted. By merging state-of-the-art genomics, eye and motion tracking, artificial intelligence and behavioral analysis, we are able to identify high-risk individuals before three years of age, which is the golden window for therapeutic and behavioral intervention. An intervention centre named WISE Development Centre was also established at North Point in 2021. Through the seamless integration of the screening and intervention services, we believe precision management of ASD children as well as other children will special educational needs could be provided in near future.

April 2022

The use of C-peptide and other biogenetic markers in the assessment of patients with diabetes

Supported by: GemVCare™

Abstract

Precision medicine is an emerging trend in the management of patients with diabetes. In recent literature, there is increasing discussion on incorporating biogenetic markers as part of clinical assessment especially for young patients in whom the aetiology of diabetes is not immediately clear. Routinely available biogenetic markers include C-peptide, anti-islet autoantibodies and genetic sequencing for monogenic diabetes. In this presentation, I will provide an overview of these biogenetic markers, their interpretation and clinical implementation.

12th May 2022

Diagnosis of common and rare neurological diseases: Technological updates and clinical applications

Supported by: Codex Genetics

Abstract

Neurodegenerative disease (ND) refers to the progressive degeneration of neuron structure and function. Rare NDs, such as hereditary spastic paraplegia, spinocerebellar ataxia, and spinal muscular atrophy affect around 1 in 1000 people in HK. Meanwhile, Alzheimer's disease and Parkinson's disease are common NDs that affect up to 8% of individuals aged over 65. Since the early symptoms of neurodegenerative diseases are often similar, for example, muscle weakness, poor coordination, and mood change, the confirmatory diagnosis of the neurodegenerative disease require a long period of time. According to European Rare Diseases Organisation (EURORDIS), 25% of patients had to wait between 5 and 30 years from early symptoms to confirmatory diagnosis of their diseases, and 40% of patients first received a wrong diagnosis. The prolonged diagnostic journey could lead to unsatisfactory treatment progress or delayed disease management.

Approximately 80% of NDs have known genetic markers or genetic risk factors. Therefore, genetic testing for neurodegenerative diseases can help with confirmatory diagnosis at an early stage. With the advent of biomarker-directed therapies for NDs, such as Onasemnogene abeparvovec, Trehalose, and Aducanumab, genetic testing can help also inform personalized treatment plans for medical professionals. The objective of this talk is to provide medical professionals an overview of recent advances in ND biomarkers researches, and clinical guidelines associated with genetic testing of NDs. Furthermore, the presentation will discuss how genetic testing assisted the diagnosis of rare ND cases.

16th June 2022

Rhinitis, Sinusitis and Nasopharyngeal carcinoma

Supported by: Take2 Diagnostics Limited

Abstract

The causes of rhinitis are mostly due to allergy or infection. It is estimated that allergic rhinitis affects 30-40% of population in the developed countries. The symptoms include rhinorrhea, nasal obstruction, sneezing and itchiness.

Sinusitis is the inflammation of the paranasal sinus. As the epithelial lining of nasal cavity is in continuity with that of paranasal sinuses, inflammation of the sinus cavities is almost always associated with inflammation of nasal cavities. Thus , the term 'rhinosinusitis' is preferred.

Nasopharyngeal carcinoma is prevalent in the Southern China and South East Asia. It most commonly present at the age of 40-60 and is of male predominance. Diagnosis of NPC at its early stage significantly improve the prognosis and the cure rate.

However, the presenting symptoms of rhinitis, sinusitis and NPC can be quite similar and impose clinical difficulties in the diagnosis and management of these illness. In this presentation, the ways of distinguishing the three disease entities and an overview of their management are discussed.

21st July 2022

Coming Soon

25th Aug 2022

Coming Soon

15th Sept 2022

Coming Soon

27th Oct 2022

Coming Soon

3rd Nov 2022

Coming Soon