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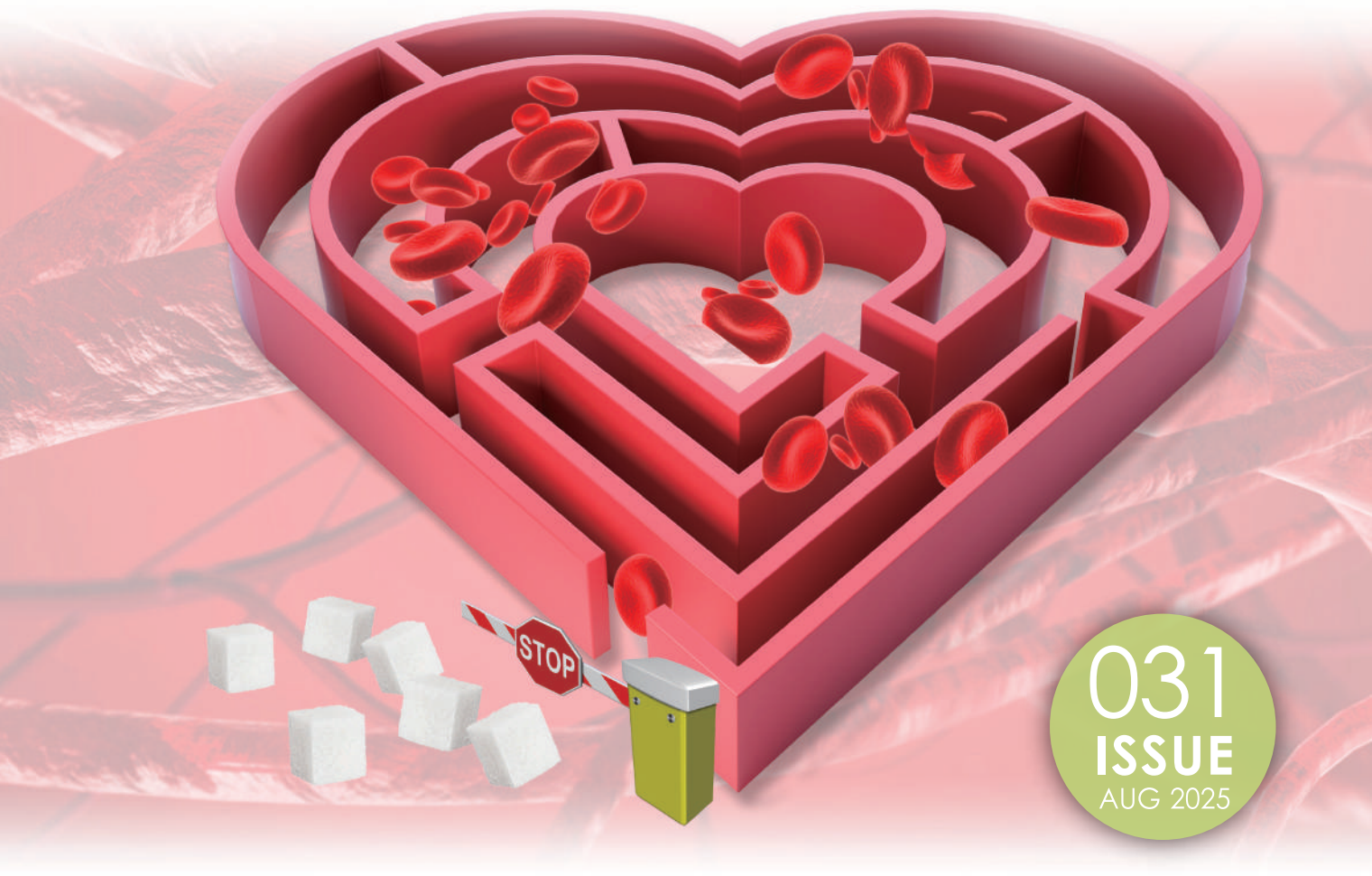
Breaking the Pathologic Combo of CVD and T2DM – Now and Then



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Abbreviated Prescribing Information (EU-DEC21-HK-FEB22)

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Presentation: Ixazomib 2.3 mg, 3 mg and 4 mg gelatin hard capsules. Indication: NINLARO in combination with lenalidomide and dexamethasone is indicated for the treatment of adult patients with multiple myeloma who have received at least one prior therapy. Dosage and administration: Recommended starting doses: NINLARO 4 mg (one capsule) administered orally once a week on Days 1, 8, and 15 of a 28-day treatment cycle at least 1 hour before or at least 2 hours after food; lenalidomide 25 mg administered daily on Days 1 to 21 of a 28-day treatment cycle; dexamethasone 40 mg administered on Days 1, 8, 15, and 22 of a 28-day treatment cycle. Treatment should be continued until disease progression or unacceptable toxicity. Treatment with NINLARO in combination with lenalidomide and dexamethasone for longer than 24 cycles should be based on an individual benefit risk assessment, as the data on the tolerability and toxicity beyond 24 cycles are limited. Antiviral prophylaxis should be considered in patients being treated with NINLARO to decrease the risk of herpes zoster reactivation. No dose adjustment is necessary in patients over 65 years of age. Reduced 3 mg starting dose recommended in moderate or severe hepatic impairment. Reduced 3 mg starting dose recommended in severe renal impairment or end-stage renal disease requiring dialysis. Contraindications: Hypersensitivity to the active substance or to its excipients. As NINLARO is administered in combination with lenalidomide and dexamethasone, refer to the package insert for these medicinal products for additional contraindications. Warnings and precautions: Thrombocytopenia has been reported with NINLARO with platelet nadirs typically occurring between Days 14-21 of each 28-day cycle and recovery to baseline by the start of the next cycle. Platelet counts should be monitored at least monthly during NINLARO treatment. Thrombocytopenia can be managed with dose modifications and platelet transfusions as per standard medical guidelines. Diarrhoea, constipation, nausea and vomiting have been reported with NINLARO, occasionally requiring use of antiemetic and antidiarrhoeal medicinal products and supportive care. The dose should be adjusted for severe (Grade 3–4) symptoms. Patients experiencing new or worsening peripheral neuropathy may require dose modification. Patients with peripheral oedema should be evaluated for underlying causes and provided supportive care, as necessary. The dose of dexamethasone should be adjusted per its package insert or NINLARO for Grade 3 or 4 symptoms. Rash should be managed with supportive care or with dose modification if Grade 2 or higher. Stevens-Johnson syndrome (SJS) has also been reported with NINLARO. If SJS occurs, discontinue NINLARO. Cases of Thrombotic microangiopathy (TMA), including thrombotic thrombocytopenic purpura (TTP) have been reported in patients who received NINLARO. Some of these have been fatal. Signs and symptoms of TMA should be monitored for and NINLARO stopped if diagnosis is suspected. Hepatic enzymes should be monitored regularly and dose should be adjusted for Grade 3 or 4 symptoms. Pregnancy: Women should avoid becoming pregnant while being treated with NINLARO. In patients developing Posterior reversible encephalopathy syndrome (PRES), discontinue NINLARO. Interactions: Co-administration of strong CYP3A inducers with NINLARO is not recommended. No dose modification is required for NINLARO with co-administration of strong CYP3A inhibitors or strong CYP1A2 inhibitors. Women should avoid becoming pregnant while being treated with NINLARO. Male and female patients of childbearing potential must use effective contraceptive measures during and for 90 days following treatment. Women using oral hormonal contraceptives should additionally use a barrier method of contraception. Breast feeding should be discontinued. Undesirable effects: Very common (all grades): Upper respiratory tract infection, bronchitis, thrombocytopenia, neutropenia, peripheral neuropathies, diarrhoea, constipation, nausea, vomiting, rash, back pain, oedema peripheral. Common (all grades): Herpes zoster. Serious adverse reactions: Serious adverse reactions reported in ≥2% of patients included diarrhoea (3%), thrombocytopenia (2%) and bronchitis (2%). As Ixazomib is administered in combination with lenalidomide and dexamethasone, refer to the package insert for these medicinal products for additional undesirable effects.

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Dear Reader,

The disease burden of Type 2 diabetes mellitus (T2DM) is substantial, with 14% of adults aged 18 or older living with the disease globally in 2022. Instead of considering T2DM as an individual disorder, there are emerging concerns about the interrelations between T2DM and various complications. In particular, the pathophysiology and treatment strategies for T2DM with co-morbid cardiovascular disease (CVD) have been extensively investigated due to its high prevalence. The co-existence of the disorders can worsen each other, leading to poor health outcomes. Thus, early identification of high-risk individuals and timely treatment are key to improving patient outcomes. Accordingly, there have been numerous investigations on biomarkers aiming to predict the CVD risk in patients with T2DM. In the current Feature Story, the treatment strategies against CVD in T2DM patients and recent findings on biomarker research will be highlighted.

In the Focus section, innovations in managing prostate cancer will be discussed. Remarkably, the applications of artificial intelligence (AI) in facilitating personalising treatment will be reviewed. In addition to the thematic topics, updates on pharmacologic management of viral hepatitis, bipolar depression, hyperphosphatemia, and multiple myeloma are featured in the Industry Updates.

Since the 1st Issue of V.Pulse was published in December 2018, I have had the privilege of serving as the Chief Editor of this amazing publication and witnessing its development. To fulfil the aim of V.Pulse to provide local medical practitioners with an update on medical breakthroughs, our Editorial Team is devoted to exploring innovations in various clinical disciplines. We hope V.Pulse to be not only a leisure reading for healthcare professionals but also a reference that benefits their clinical practice. Thus, we seek CME approval for selected V.Pulse articles and have launched the mobile app to ensure easy access.

After 7 years of service at V.Pulse, it is an appropriate time for me to step down from my current position and move on to the next chapter. Meanwhile, I would like to take this opportunity to thank all the healthcare professionals who contributed valuable clinical opinions to V.Pulse. I would also like to thank our sponsors for their trust and support. Moreover, the great effort of the Editorial Team put in producing V.Pulse is deeply appreciated. Last but not least, I would like to thank you, all readers, for your continuous support, which makes V.Pulse possible and sustainable. Thank you!

Farewell, and hope you enjoy this issue.

Dr. Roy Yuen-chi Lau
PhD, DBA, MPH, MMedSc, MA, BSc, FRSPH, MIET, MRSC, MSB, CBiol, CSci, MRACI CChem
Chief Editor

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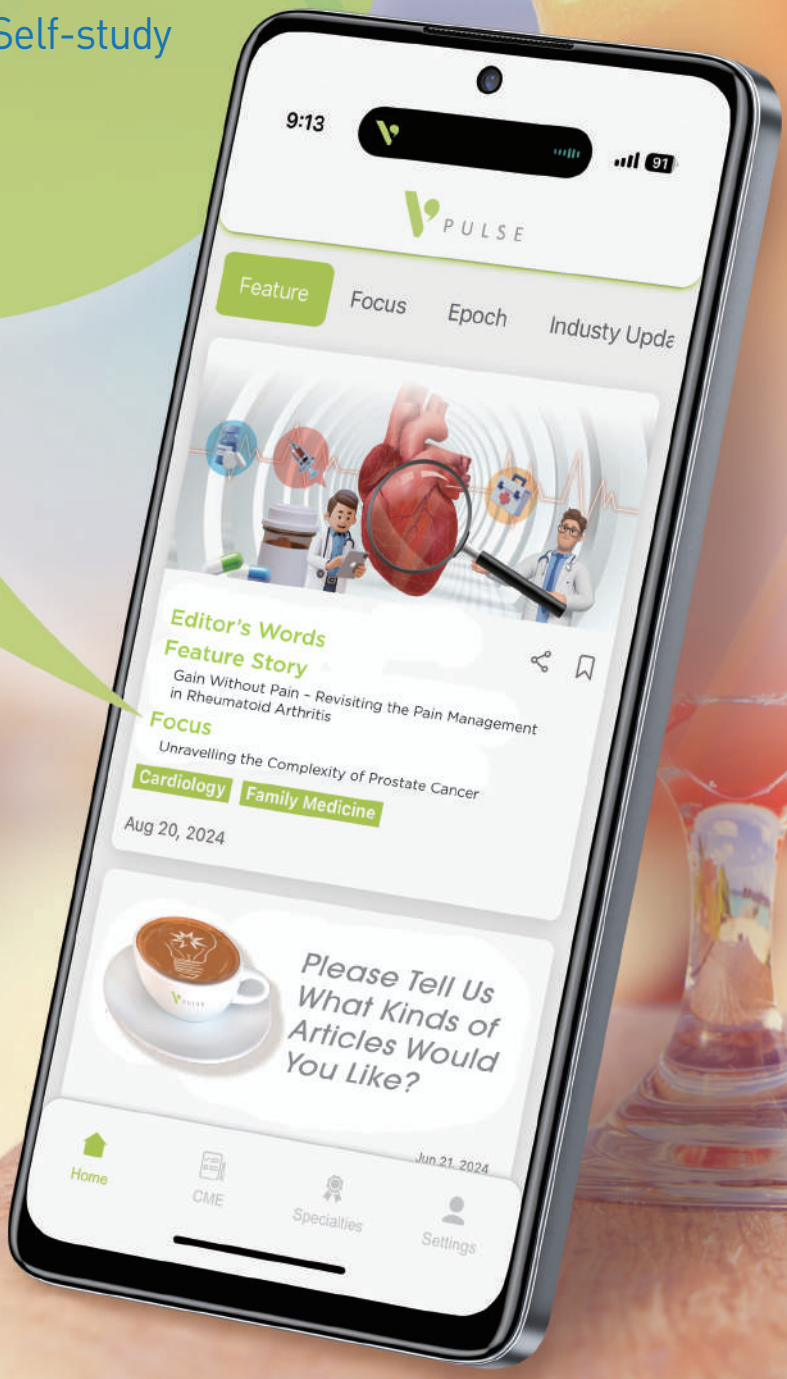

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by Dr. Roy Lau

Breaking the Pathologic Combo of CVD and T2DM – Now and Then

Dr. Roy Yuen Chi Lau, PhD, DBA
Chief Editor, V-Pulse

Type 2 diabetes mellitus (T2DM) is a persistent state of hyperglycaemia and glucose intolerance that occurs when the body cannot effectively respond to insulin. 14% of adults aged 18 or older were living with diabetes globally in 2022, whereas that was 7% in 1990[1]. While T2DM reduces life expectancy by up to 10 years, the main cause of death for patients with T2DM is cardiovascular disease (CVD)[2]. In view of the burden of CVD on T2DM patients, clinical guidelines generally advocate glycaemic control as the cornerstone for managing T2DM and as a protective measure against cardiovascular complications[3]. In recent years, emerging studies on biomarkers and prediction models aiming to estimate the CVD risk among T2DM patients, which facilitate early treatment and optimise outcomes. The purpose of this article is to review the pathophysiology of T2DM complicated by CVD and highlight the clinical management, as well as recent advancements in combating the diseases.

The Fatal Attraction between CVD and T2DM

CVD comprises a group of disorders of the heart and blood vessels. Although the lack of glycaemic control is not the only risk factor for CVD, hyperglycaemia may lead to nerve and cardiac conduction impairments and CVD. The incidence of CVD among T2DM patients has been reported to be 2-4 times higher than that of their non-diabetic counterparts[4]. According to the CAPTURE study (2019), which involved 9,823 T2DM patients across 13 countries, the overall weighted CVD and atherosclerotic CVD (ASCVD) prevalence estimates were 34.8% and 31.8%, respectively. The most prevalent weighted CVD subtypes were coronary heart disease (CHD, 17.7%), followed by carotid artery disease (8.4%), and cerebrovascular disease (7.2%, **Figure 1**)[5].

Interestingly, a declining trend in CVD incidence among T2DM patients has been consistently reported in various regions since the early 1990s[6], particularly in high-income countries, such as the USA[7], Hong Kong[8] and South Korea[9]. Nonetheless, there is still a large difference in the incidence of CV morbidity and mortality between T2DM patients and those without the disease.

Regarding the pathophysiological link between CVD and T2DM, various factors that contribute to the development of atherosclerosis and CVD are commonly comorbid in T2DM patients, including hypertension, insulin resistance, hyperglycaemia, obesity, and dyslipidaemia. Atherosclerosis begins with the deposition of lipoproteins in the arterial wall. In the subendothelial space, foam cells accumulate and low-density lipoprotein (LDL) particles are oxidised, leading to vascular modifications. Acute coronary and cerebrovascular syndromes occur when arterial plaque deposits become unstable and rupture. Notably, insulin

resistance promotes macrovascular abnormalities through the formation of atheroma plaques, diastolic dysfunction, and ventricular hypertrophy. Moreover, hyperglycaemia promotes the development of CVD through advanced glycosylated end products and oxidative stress among other factors. Both insulin resistance and hyperglycaemia promote coronary artery disease (CAD), cerebrovascular disease, and heart failure[10].

The Economic Burden of CVD in T2DM

Undoubtedly, the disease burden of CVD in T2DM patients is substantial. Apart from the increased morbidity and mortality, a systematic review of 24 articles by Einarson *et al*. (2018) revealed that CVD costs contributed between 20%-49% of the total direct costs of treating T2DM. The median annual costs per patient for CVD, coronary artery disease, heart failure, and stroke were, respectively, 112%, 107%, 59%, and 322% higher compared with those for T2DM patients without CVD[11]. The result highlighted the significant increase in the costs attributed to CVD. Given that the burden of CVD in T2DM patients is often avoidable, prevention and early treatment are urgently needed.

Who Is at Risk?

It has been widely published that risk factors, including hypertension, dyslipidaemia, obesity, lack of physical activity, poor glycaemic control, and smoking, significantly increase the CVD risk among T2DM patients. For instance, patients with both hypertension and diabetes double their risk for CVD[4].

T2DM patients have an increased susceptibility to dyslipidaemia. This correlation is partially due to the enhanced release of free fatty acids (FFAs) in insulin-resistant adipocytes. Elevated FFA levels promote triglyceride (TG) synthesis and, subsequently, lead to the release of apolipoprotein B (apoB) and very low-density lipoprotein (VLDL) cholesterol[12]. Although the mechanism by which obesity increases CVD risk has not been fully explained, a previous study suggested that each one-unit increase in BMI is associated with a 5% increase in heart failure risk for males and 7% for females, even after adjusting for other heart risk factors[13].

Smoking tobacco substantially raises the risk of developing T2DM and its associated complications. Notably, smoking is more strongly linked to CHD risk in females than males, especially among those who smoke over 20 cigarettes daily[14].

Importantly, poor glycaemic control appears to be an independent risk factor for all-cause and CVD mortality, independent of other modifiable CVD risk factors in patients with T2DM. Long-term intraindividual variability of HbA1c or basal blood glucose is associated with micro-and macrovascular complications and with an increased risk of important adverse CV events. Moreover, it has been reported that each 1-point increase in HbA1c is associated with an 8% increase in the risk of heart failure and a 36% increased risk for heart failure hospitalisation[15].

Treatment Strategies against CVD in T2DM Patients

In patients with T2DM without symptomatic ASCVD or severe target-organ damage (TOD), the 2023 ESC Guideline recommends estimating the 10-year CVD risk using the SCORE2-Diabetes prediction algorithm

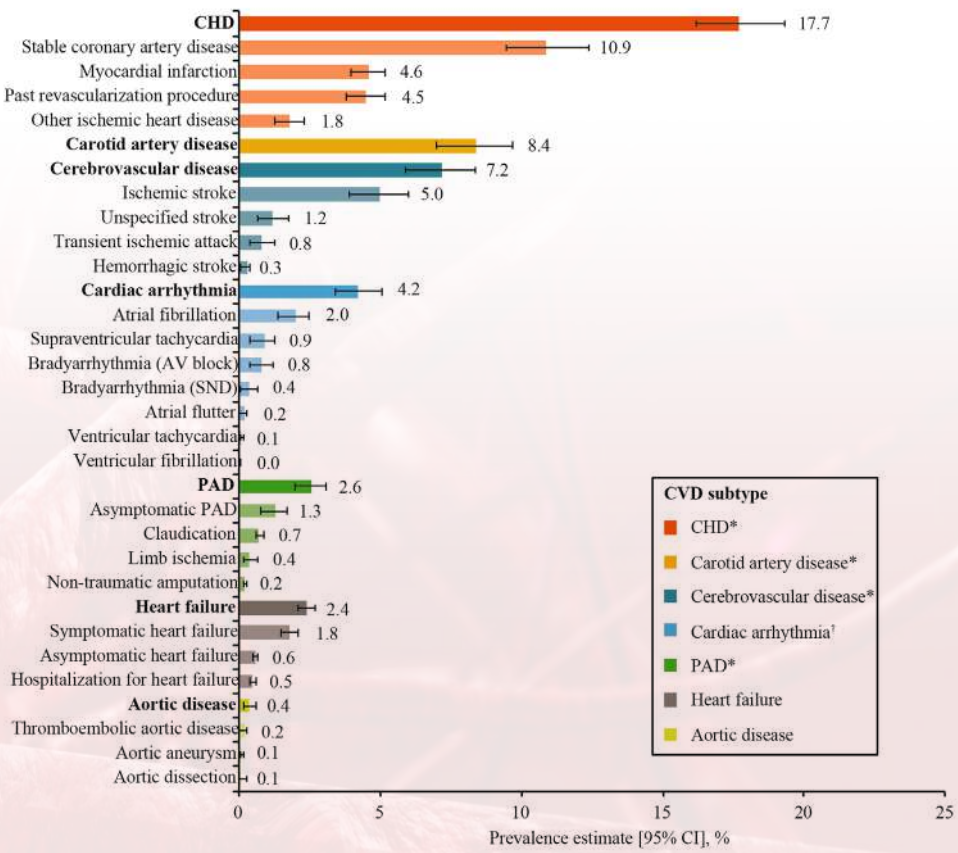


Figure 1. *Overall weighted CVD prevalence among T2DM patients[5], *Categorised as ASCVD, PAD: peripheral artery disease*

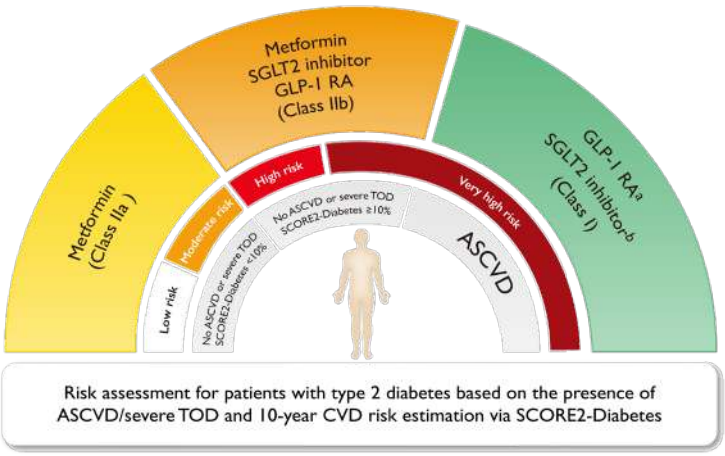


Figure 2. *Glucose-lowering treatment for T2DM patients to reduce CV risk*[3]

for T2DM. Similar to the management of most chronic diseases, clinical guidelines generally recommend lifestyle intervention as a core component in preventing CVD risk in T2DM patients. According to the 2023 ESC Guideline, weight reduction and physical exercise are recommended to improve metabolic control and overall CVD risk profile. Regarding smoking cessation recommendations, nicotine replacement therapy, varenicline, and bupropion, as well as individual or telephone counselling, are suggested to improve the smoking cessation success rate[3].

Given that reducing HbA1c decreases microvascular complications, particularly when achieving near-normal levels (HbA1c<7%, <53 mmol/mol), the 2023 ESC Guideline recommends applying tight glycaemic control to reduce microvascular complications, whereas the HbA1c targets should be individualised according to the patient's comorbidities, diabetes duration, and life expectancy[3].

Regarding pharmacotherapy, metformin remains the first-line treatment, as per the 2023 ESC Guideline. The therapy is continued until intolerance or the occurrence of ASCVD or indicators of high ASCVD risk. For patients with SCORE2-Diabetes reaches 10%, (sodium-glucose cotransporter 2) SGLT-2 inhibitor or (glucagon-like peptide 1 receptor agonist) GLP-1RA should be considered (**Figure 2**)[3].

Besides glycaemic control, high levels of LDL-C and non-high-density lipoprotein cholesterol (non-HDL-C) and low levels of HDL-C are associated with an increased risk of CV events and mortality in patients with and without diabetes. Thus, lipid-lowering agents are also recommended for T2DM patients with dyslipidaemia. The 2023 ESC Guideline recommends target LDL-C levels of <1.8 mmol/L and <1.4 mmol/L for high-risk and very high-risk patients, respectively. Statins are recommended as the first-line therapy to reduce LDL-C levels due to their efficacy in preventing CV events and reducing CV mortality[3].

Recent Advancements in Predicting CVD Risk in T2DM

While CVD remains a leading cause of morbidity and mortality in T2DM patients, there are emerging investigations aiming to identify biomarkers of CVD in order to improve targeted therapies for the prevention and treatment of CVD among these patients. Currently, most candidate biomarker studies focus on known pathophysiological pathways, such as those related to cardiac stress, inflammation, matrix remodelling, lipids, endothelial dysfunction, and diabetes pathophysiology[16].

In a recent study by Meng *et al*. (2024), 900 Chinese people were recruited and, according to their medical history, were allocated into 3 groups, namely healthy control group (HC, n=300), new-onset T2DM group (T2DM, n=300), and new-onset T2DM with CHD group (T2DM+CHD, n=300). In each group, the participants were further categorised into 3 groups based on their age. Fasting glucose, HbA1c, triglycerides, total cholesterol, LDL-C, HDL-C, apolipoprotein A1 (ApoA1), ApoB, ApoB/ApoA1 ratio, lipoprotein(a) [Lp(a)], high-sensitivity C-reactive protein (hsCRP), and

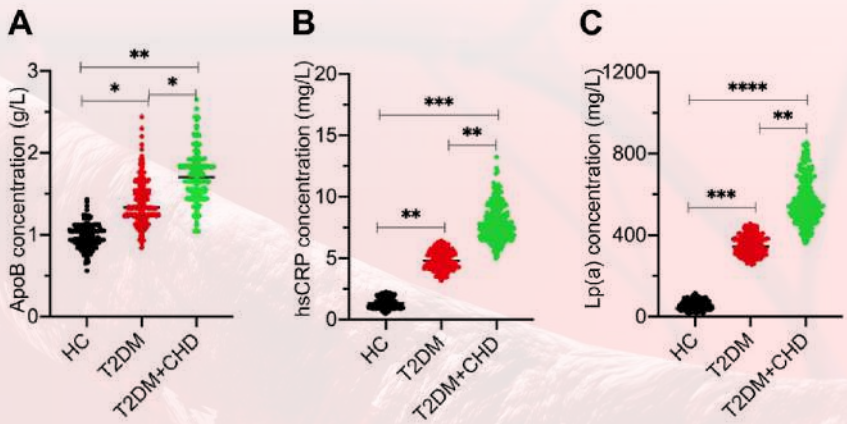


Figure 3. *Biomarker levels in HC, T2DM, and T2DM+CHD groups*[17]*, *p<0.05; **p<0.01; ***p<0.001; ****p<0.0001*

homocysteine (HCY) levels were analysed in all groups[17].

Although existing evidence generally accepts that dyslipidaemia is associated with an increased risk of CVD in T2DM patients, the results did not show a significant difference in LDL-C, triglycerides, and total cholesterol levels between T2DM and T2DM+CHD groups. Instead, the results indicated significant increases in ApoB, Lp(a), and hsCRP levels in the T2DM+CHD group compared to the T2DM group, whereas other biomarkers did not show significant differences (**Figure 3A-3C**). Across all age groups, the patterns remained consistent[17]. Given that Lp(a) and hsCRP levels showed particularly notable elevations, the biomarkers are potential indicators of CHD risk in the T2DM population.

Apart from investigating the associations of single biomarkers with CVD risk in T2DM, there are studies evaluating a large number of biomarkers simultaneously. For instance, in the study by Gerstein *et al*. (2015), a set of 237 biomarkers from 8,401 participants with dysglycaemia were analysed. Biomarkers that were each independent determinants of 3 different incident outcomes, namely (1) the composite of myocardial infarction, stroke, or CV death, (2) these plus heart failure hospitalisation or revascularisation, and (3) all-cause death, were identified. Remarkably, 3 biomarkers (NT-proBNP, angiopoietin 2, and glutathione S transferase α) were consistently identified in all of the Cox regression models and for all of the outcomes, with NT-proBNP being the strongest predictor of all 3 outcomes[18].

In the era of artificial intelligence (AI), AI-based technology has been applied to optimise the prediction of CVD risks among T2DM patients. For instance, Ding *et al*. (2023) developed machine learning models to predict the 3-year ASCVD risk in T2DM patients based on the clinical data of 4,722 T2DM patients, which included demographic information, disease histories, laboratory tests and physical examinations. 5 machine learning methods (logistic regression [LR], support vector machine [SVM], gradient boosting decision tree [GBDT], random forest [RF], and adaptive boosting [AdaBoost]) were developed, with good performance in both internal and external test sets (**Figure 4**)[19]. The study served as a promising demonstration of applying machine learning technology to develop prediction models for personalising treatment and optimising outcomes.

Advanced Technologies against Clinical Challenges

Clinicians have widely recognised the pathological linkage between CVD and T2DM. Hence, treatment recommendations for preventing and controlling CVD among T2DM patients have been addressed in clinical guidelines. Nonetheless, early identification of T2DM patients with a high risk of CVD remains a challenging clinical issue. Even worse is that T2DM patients are often at risk of other complications in addition to CVD, such as chronic kidney disease (CKD) in the case known as Cardiovascular-Kidney-Metabolic (CKM) syndrome. The complications coexist and exacerbate each other, leading to a higher risk of adverse health outcomes and increasing the difficulty in treating the patients. However, with the better understanding of the pathophysiology of T2DM and its complications, and the development of advanced technologies, particularly AI, more accurate prediction models and effective

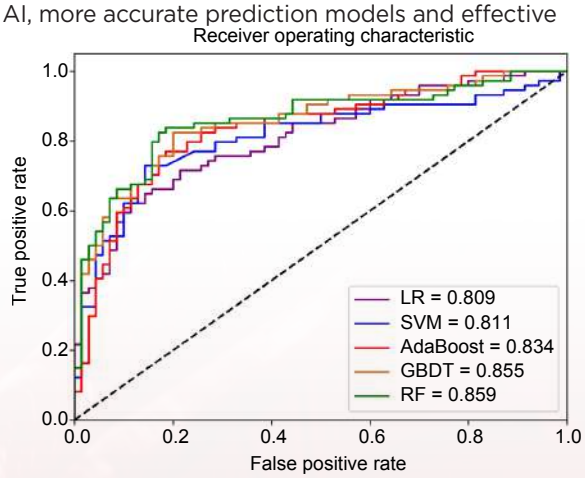


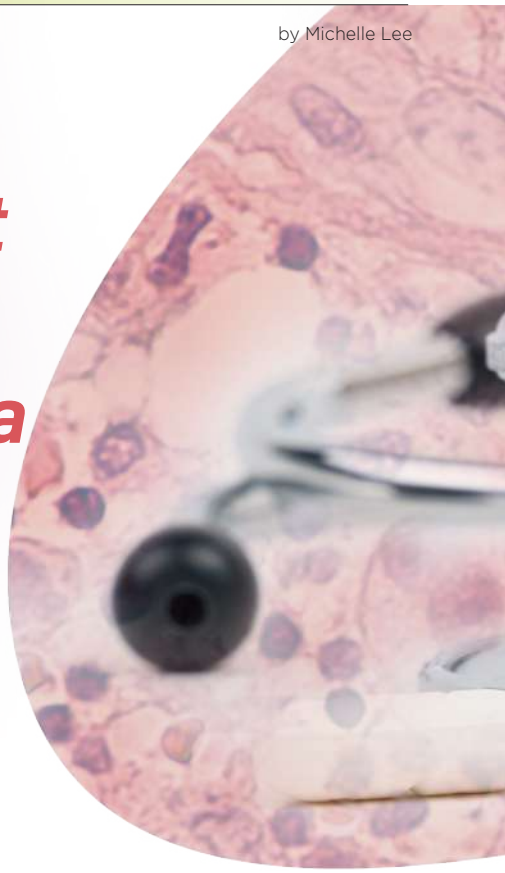
Figure 4. *Receiver operating curves for the prediction of ASCVD using different machine learning models in the testing set*[19]

References

1. World Health Organization. Diabetes. https://www.who.int/news-room/fact-sheets/detail/diabetes. **2.** International Diabetes Federation. Diabetes & Heart. 2016. https://idf.org/about-diabetes/diabetes-complications/cardiovascular-disease/. **3.** Marx et al. *Eur Heart J* 2023; 44: 4043–140. **4.** Hudspeth. *Am J Manag Care* 2018; 24: S268–72. **5.** Mosenzon et al. *Cardiovasc Diabetol* 2021; 20. DOI:10.1186/S12933-021-01344-0,. **6.** Yun and Ko. *Metabolism* 2021; 123. DOI:10.1016/J.METABOL.2021.154838/ASSET/104A0D2F-9D5A-4DEF-A5EE-0AA261C8FF92/MAIN.ASSETS/GR1.JPG. **7.** Gregg et al. *The Lancet* 2018; 391: 2430–40. **8.** Luk et al. Diabetes Care 2017; 40: 928–35. **9.** Park et al. *Diabetes Metab J* 2020; 45: 120–4. **10.** Joseph et al. *Circulation* 2022; 145: 722–59. **11.** Einarson et al. *Value in Health* 2018; 21: 881–90. **12.** Siam et al. *Rev Cardiovasc Med* 2024; 25. DOI:10.31083/J.RCM2512436/219035EB3A5B7D54827006F55360A8D0.PDF. **13.** Welsh et al. *Eur J Prev Cardiol* 2024; 31: 1026–35. **14.** Balakumar et al. *Pharmacol Res* 2016; 113: 600–9. **15.** Roman et al. *Type 2 Diabetes - From Pathophysiology to Cyber Systems* 2021; published online April 20. DOI:10.5772/INTECHOPEN.97422. **16.** Bachmann and Wang. *Diabetologia* 2017; 61: 987. **17.** Meng et al. *Heliyon* 2024; 10. DOI:10.1016/j.heliyon.2024.e40074. **18.** Gerstein et al. *Circulation* 2015; 132: 2297–304. **19.** Ding et al. *J Diabetes Investig* 2023; 14: 1289–302.

by Michelle Lee

Redefining the Treatment Approach of Advanced-Stage Hodgkin Lymphoma



Dr. Liu Sung Yu Herman
• *Specialist in Haematology & Haematological Oncology*

Hodgkin lymphoma (HL) is a rare B-cell lymphatic malignancy distinguished by its unique histological, immunophenotypic, and clinical characteristics[1,2]. According to the 2022 Hong Kong Cancer Registry data, HL accounts for ~3% of all haematological malignancies in Hong Kong, with 66 new cases reported that year[3]. HL is classified into two main subtypes: nodular lymphocyte-predominant Hodgkin lymphoma (NLPHL), and classical Hodgkin lymphoma (cHL), which comprises the majority of cases[2]. Despite cHL being a highly curable cancer, with a 5-year survival rate of 90%, patients with advanced-stage cHL who do not respond to first-line therapy generally have a poor prognosis[4]. Fortunately, the introduction of A+AVD (Brentuximab Vedotin + Doxorubicin, Vinblastine, Dacarbazine) has markedly improved therapeutic outcomes for advanced-stage HL, demonstrating superior efficacy over frontline regimen in clinical trial[5]. In a recent interview, Dr. Liu Sung Yu Herman, a specialist in haematology and haematological oncology, offered his insights on the efficacy and safety of the A+AVD regimen in the treatment of advanced-stage HL.

Reasons for Advanced-Stage HL at Diagnosis

Patients with cHL are often diagnosed at advanced stages (III/IV)[6]. For the reasons behind this, Dr. Liu highlighted the significantly variable progression rate of lymphoma among individuals as the reason behind, with some subtypes exhibiting more aggressive growth. Approximately 60% of Hodgkin lymphoma (HL) cases present with mediastinal involvement[7]. Dr. Liu stated that patients with cervical lymphadenopathy often seek medical attention earlier due to palpable masses, whereas mediastinal or abdominal tumours frequently remain asymptomatic until advanced stages.

About 33% of HL patients present with systemic symptoms of fever, night sweats and weight loss, which may be mistaken for infections like tuberculosis (TB). The differential diagnosis between HL and TB poses a significant clinical challenge due to overlapping symptoms. This increases the risk of misdiagnosis, contributing to delayed HL diagnosis and treatment[8,9]. A community-based study identified key barriers to seeking medical help, including competing time commitments, anxiety about potential diagnoses, and challenges in communication with doctors. These further contribute to late-stage diagnoses[10].

General Considerations in Treating HL

Treatment selection for advanced HL patients is personalised based on disease distribution, age, cardiac and pulmonary function. There is growing recognition of the importance of evaluating late treatment effects during regimen planning. Key long-term complications include secondary malignancies, toxicity and impaired fertility[11].

Dr. Liu introduced the ABVD regimen (doxorubicin, bleomycin, vinblastine, dacarbazine), which has been the frontline standard for advanced-stage HL for decades. However, up to 30% of patients experience refractory or relapsed HL after ABVD regimen. A key limitation of this regimen is bleomycin-associated pulmonary toxicity, which is unpredictable and potentially fatal[5]. Notably, bleomycin-induced pneumonitis (BIP) occurs in up to 46% of patients receiving bleomycin-containing chemotherapy, while chemotherapy-induced nausea and vomiting (CINV) has significant negative impact on patients' quality of life and treatment adherence[12,13]. Moreover, ABVD demonstrates a higher cumulative risk of secondary malignancies[14].

Remarkably, patient concerns regarding treatment vary significantly by age. The CONNECT survey revealed that younger patients prioritise secondary malignancies and fertility issues, whereas older patients are more concerned about lung damage and infections[6]. These findings highlight the critical need for novel therapeutic approaches that provide durable efficacy with favourable safety profile across all age groups.

The Clinical Implications of A+AVD

For patients with advanced-stage HL, the challenge is inducing durable remission while minimising long-term treatment-related complications[8]. Regarding the limitation of the standard ABVD regimen, Dr. Liu recommended the A+AVD regimen as a preferred alternative to ABVD, replacing bleomycin with brentuximab vedotin (BV). BV is an antibody-drug conjugate targeting CD30, which is a characteristic surface antigen expressed on Reed–Sternberg cells in cHL[5]. By targeting CD30, BV delivers cytotoxic therapy more precisely, enhancing efficacy while eliminating the risk of bleomycin-associated pulmonary toxicity[5,15].

Based on the results from the ECHELON-1 trial, the A+AVD is approved for the treatment of adult patients with previously untreated CD30+ Stage IV Hodgkin lymphoma in Hong Kong[16]. ECHELON-1 is a large, international, open-label, randomised, multicentre, phase 3 trial conducted to compare A+AVD and ABVD as frontline therapy in 1,334 patients with stage III or IV cHL who had not been previously treated with systemic chemotherapy or radiotherapy[5]. The primary endpoint is 2-year modified progression-free survival rates which were 82.1% (95% CI: 78.8-85.0) and 77.2% (95% CI: 73.7-80.4) in the A+AVD and ABVD groups, respectively[5]. In previous report of ECHELON-1, 6-year follow-up analyses demonstrated significant improvements in overall survival (OS) (**Figure 1**) and progression-free

survival (PFS) (**Figure 2**) with A+AVD, compared to ABVD, with a comparable safety profile[17,18]. From the latest updates of ECHELON-1, the 7-year OS rates were 93.5% with A+AVD and 88.8% with ABVD (HR=0.62; 95% CI: 0.42-0.90; p=0.011)[17]. Dr. Liu emphasised that the significance of the 4.7 percentage points improvement of OS favoured A+AVD over ABVD. 7-year PFS rates were 82.3% with A+AVD and 74.5% with ABVD (HR=0.68; 95% CI: 0.53-0.86; p=0.001). Overall, patients who received A+AVD showed a sustained PFS and OS benefit compared to ABVD, with PFS rates indicating potential curability. The safety profile in patients who received A+AVD showed no new safety issues at 7 years[17].

Dr. Liu further emphasised the benefits of the A+AVD regimen across diverse patient populations. By omitting the chemotherapy bleomycin in ABVD regimen, A+AVD demonstrates improved tolerability in older patients while reducing the cumulative risk of secondary malignancies in younger individuals. He also recommends A+AVD for patients with pre-existing pulmonary issues as it offers a safer therapeutic alternative by eliminating bleomycin-associated lung damage due to pulmonary toxicity.

Real-Life Benefits of A+AVD in The Management of Advanced-Stage HL

To highlight the clinical utility of A+AVD, Dr. Liu shared the case of his patient, demonstrating the real-world efficacy of A+AVD. A 25-year-old Chinese male patient presented with B symptoms, bulky disease and involvement of cervical lymph nodes, mediastinum, and bone marrow. He sought medical attention due to persistent neck swelling and reduced exercise tolerance. He was diagnosed with Stage IV HL. Given his advanced HL and future fertility concerns, Dr. Liu arranged for sperm banking prior to initiating treatment. The patient started with A+AVD regimen. After 2 cycles, a PET-CT scan confirmed complete metabolic remission, prompting continuation of the remaining cycles. During therapy, his primary complaint was peripheral neuropathy-induced numbness, which impacted his IT career performance. This was managed with vitamin B supplementation, leading to full resolution of symptoms.

Following treatment completion, the patient has remained in sustained remission for 6 years, with no evidence of relapsed/refractory HL or secondary malignancies. "He has since gotten married and successfully started a family with a child in kindergarten," Dr. Liu highlighted. This case reinforces the efficacy of A+AVD as a front-line regimen in advanced-stage HL.

The clinical case shared by Dr. Liu complied with the findings in the ECHELON-1 study. For instance, therapy-naïve patients with advanced-stage HL who received A+AVD showed sustained PFS and OS outcomes[17]. Also, some patients had peripheral neuropathy with A+AVD, but most patients had complete resolution (85.6%) or amelioration (61%) of this side effect at the last follow-up[18].

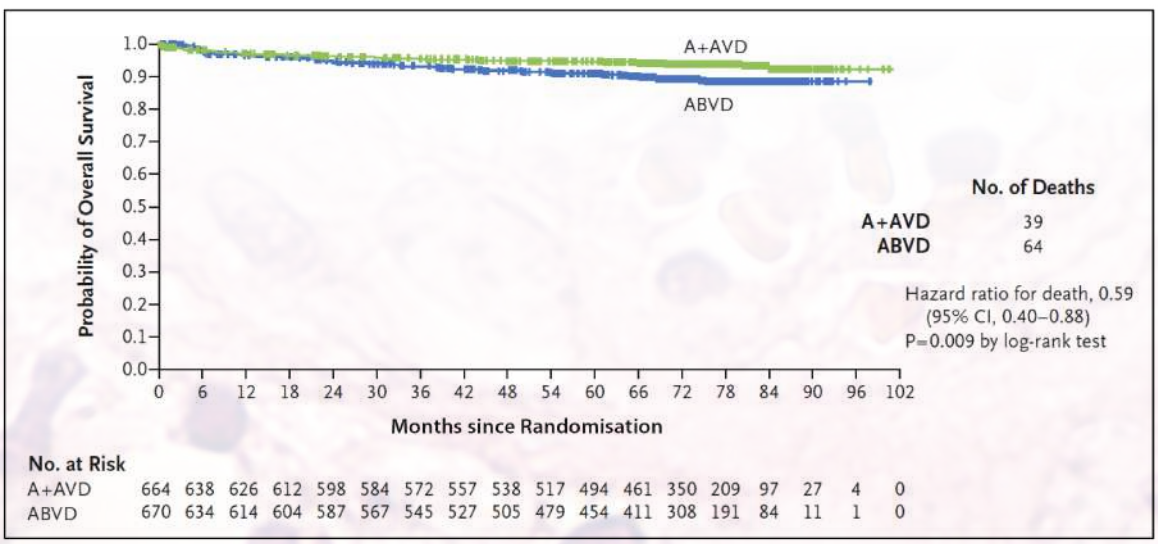


Figure 1: Overall Survival (Intention-to-Treat Population). The intention-to-treat population included all the patients who underwent randomisation. Tick marks indicate censored data. A+AVD denotes brentuximab vedotin plus doxorubicin, vinblastine, and dacarbazine; and ABVD doxorubicin, bleomycin, vinblastine, and dacarbazine[18].

Case Study Highlights

- The efficacy of A+AVD as frontline regimen in advanced HL was well-demonstrated and sustained over 6 years
- The patient achieved complete metabolic remission after 2 cycles of A+AVD regimen
- The A+AVD treatment appeared not to increase the risk of infertility
- The treatment-related neuropathy could be well-managed with vitamin B supplementation

Take Home Message

To summarise, the efficacy and safety of A+AVD are well-established in both clinical trials and real-world practice. HL carries a good prognosis, even in advanced stages, with a high proportion of patients achieving long-term survival. "The key therapeutic goal is early use of highly CD30-selective regimens like A+AVD rather than conventional chemotherapy alone in advanced-stage disease." Dr. Liu stated, underscoring the need to reduce long-term chemotherapy-induced toxicities while maintaining efficacy.

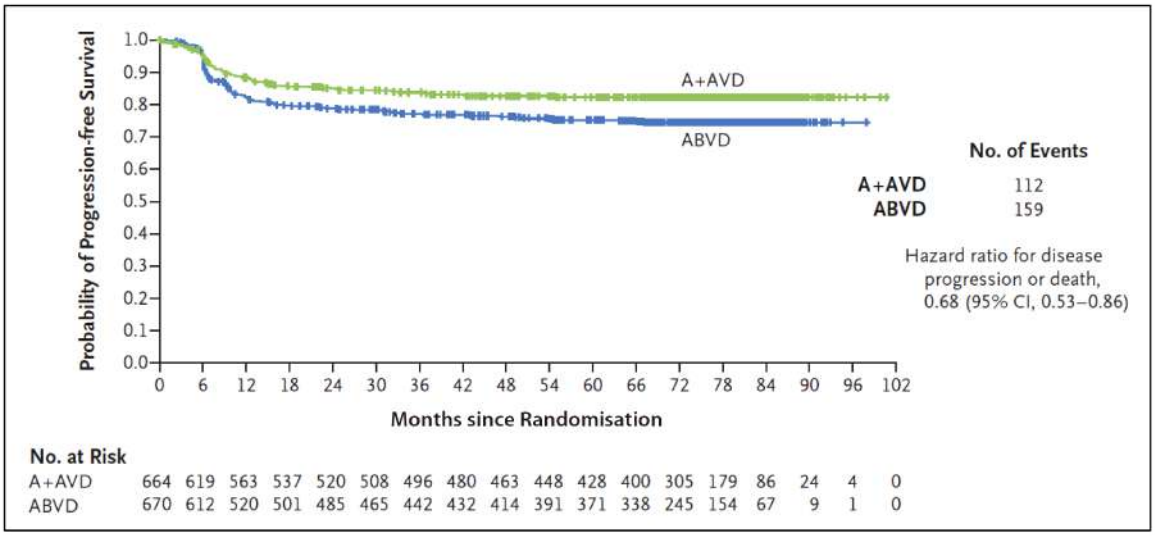


Figure 2: *Progression-free Survival According to Investigator Assessment (Intention-to-Treat Population). Tick marks indicate censored data*[18].

References

1. Huang J, Pang WS, Lok V, et al. Incidence, mortality, risk factors, and trends for Hodgkin lymphoma: a global data analysis. *J Hematol Oncol*. 2022;15(1). **2.** Ullah F, Dima D, Omar N, Ogbue O, Ahmed S. Advances in the treatment of Hodgkin lymphoma: Current and future approaches. *Front Oncol*. 2023;13. **3.** Hong Kong Cancer Registry HA. *Statistics of Haematological Malignancies in 2022*.; 2024. **4.** Avigdor A, Trinchese F, Gavini F, et al. First-line treatment of stage IIB to stage IV classical Hodgkin lymphoma in Italy, Israel, and Spain: Patient characteristics, treatment patterns, and clinical outcomes. *EJHaem*. 2022;3(2):415-425. **5.** Connors JM, Jurczak W, Straus DJ, et al. Brentuximab Vedotin with Chemotherapy for Stage III or IV Hodgkin's Lymphoma. *New England Journal of Medicine*. 2018;378(4):331-344. **6.** Flora DR, Parsons SK, Liu N, et al. Patient preferences in the treatment of stage III/IV classic Hodgkin lymphoma: Results from the CONNECT cross-sectional survey. *Br J Haematol*. 2024;204(4):1262-1270. **7.** Witte B, Hürtgen M. *Lymphomas Presenting as Chest Wall Tumors Maligne Lymphome Als Thoraxwandtumore*. **8.** Ansell SM. Hodgkin lymphoma: 2025 update on diagnosis, risk-stratification, and management. *Am J Hematol*. Published online December 1, 2024. **9.** Roumi Jamal B, Farho MA, Hariri MM, Khoury A. A difficult case of Hodgkin lymphoma mimicking tuberculosis in a young female patient: A case report. *Clin Case Rep*. 2023;11(5). **10.** Al-Azri MH. Delay in cancer diagnosis: Causes and possible solutions. *Oman Med J*. 2016;31(5):325-326. **11.** Malignancies L, Lymphoma H. *Pan-London Haemato-Oncology Clinical Guidelines*.; 2020. **12.** Sleijfer S. Bleomycin-induced pneumonitis. *Chest*. 2001;120(2):617-624. **13.** Feyer P, Jordan K. Update and new trends in antiemetic therapy: The continuing need for novel therapies. *Annals of Oncology*. 2011;22(1):30-38. **14.** Nassi L, de Sanctis V, Loseto G, et al. Second Cancers in Classical Hodgkin Lymphoma and Diffuse Large B-Cell Lymphoma. A Systematic Review by the Fondazione Italiana Linfomi. *Cancers (Basel)*. 2022;14(3). **15.** Younes A, Bartlett NL, Leonard JP, et al. Brentuximab Vedotin (SGN-35) for Relapsed CD30-Positive Lymphomas. *New England Journal of Medicine*. 2010;363:1812-21. **16.** Adcetris® Hong Kong Prescribing Information. **17.** Ansell SM, Straus DJ, Connors JM, et al. Seven-Year Overall Survival Analysis from ECHELON-1 Study of A+AVD versus ABVD in Patients with Previously Untreated Stage III/IV Classical Hodgkin Lymphoma. Poster Session 7053. 2025. **18.** Ansell SM, Radford J, Connors JM, et al. Overall Survival with Brentuximab Vedotin in Stage III or IV Hodgkin's Lymphoma. *New England Journal of Medicine*. 2022;387(4):310-320.

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MATTERHORN Trial Revealed: Durvalumab Boosts Survival in Resectable Gastric Cancer

by Michelle Lee

Gastric cancer (GC) ranks as the sixth most common cancer and cause of cancer deaths in Hong Kong, and fourth globally (7.7% of cancer deaths)[1]. While surgery is the primary treatment for operable GC, relapse remains a major challenge[1]. The current perioperative standard, 5-fluorouracil, leucovorin, oxaliplatin and docetaxel (FLOT) chemotherapy, improves outcomes but nearly half of patients experience disease recurrence[2,3]. Immune checkpoint inhibitors like durvalumab, approved in metastatic gastric/gastroesophageal junction cancer (GC/GEJC), were not approved in the perioperative setting[2]. The MATTERHORN Phase 3 trial (NCT04592913) evaluated the efficacy and safety of durvalumab + FLOT in resectable GC/GEJC, achieving its primary endpoint with a statistically significant EFS improvement, offering a potential global SoC for resectable GC/GEJC[2].

MATTERHORN Study Design[2]

Phase 3 | Global | Double-blind | Randomised

Objective

To assess the **efficacy and safety of the combination of perioperative durvalumab (D) + FLOT** vs placebo (P) + FLOT in patients with **locally advanced, resectable GC/GEJC**

Study Population (n=948)

Eligible adult patients with **histologically confirmed, resectable untreated GC/GEJC***

	Experimental arm D + FLOT group (n=474)	Control arm P + FLOT group (n=474)
Cycle 1-4	D: Durvalumab 1,500 mg on Day 1 Q4W + FLOT: FLOT on Day 1 and Day 15 for 4 cycles (2 cycles each neoadjuvant/adjuvant)	D: Placebo on Day 1 Q4W + FLOT: FLOT on Day 1 and Day 15 for 4 cycles (2 cycles each neoadjuvant/adjuvant)
Cycle 5-14	D: Durvalumab 1,500 mg on Day 1 Q4W for 10 cycles	D: Placebo on Day 1 Q4W for 10 cycles

Interim analysis data cutoff: 20 Dec 2024
Median follow-up duration: 31.5 months

Primary endpoint[2,4]

Event-free survival (EFS)†

Defined as the time from randomization to progression, local or distant recurrence, or death

Key secondary endpoints[2,4]

Pathologic complete response (pCR)

- Defined as the proportion of patients who have no residual viable tumor in the resected specimens
- Prior findings revealed **D + FLOT achieved significantly higher pCR rates** than P + FLOT

Overall survival (OS)

- Defined as the length of time from randomisation until the date of death due to any cause

Interim analysis results[2]

29% **Higher EFS for D + FLOT**

vs P + FLOT (HR=0.71; 95% CI: 0.58-0.86; $p<0.001$)

EFS rate at 12 months:

D + FLOT **78.2%**

D + FLOT **74.0%**

EFS rate at 24 months:

D + FLOT **67.4%**

D + FLOT **58.5%**

- While **median OS was not yet reached** in the D + FLOT arm, it was 47.2 months for P + FLOT, showing **a trend favoring durvalumab** (HR=0.78, 95% CI: 0.62-0.97; $p=0.025$; 33.9% maturity)‡
- Maximum Grade 3 or 4 adverse event rates were similar between treatment arms

Conclusion[2]

- **The MATTERHORN trial demonstrated that adding durvalumab to FLOT chemotherapy significantly improved EFS over FLOT alone in resectable GC/ GEJC, with a promising OS trend**
- **These findings position D + FLOT as a potential new global SoC for resectable GC/ GEJC**

*Patients aged ≥18 years with histologically confirmed, resectable (Stage II-IVa per American Joint Committee on Cancer 8th edition) untreated G/GEJ adenocarcinoma[2]

† EFS superiority for D + FLOT vs P + FLOT was assessed in all randomised patients by a stratified log-rank test (2-sided significance level threshold: 0.0239) on data according to RECIST v1.1 per BICR and/or locally by pathology testing[2]

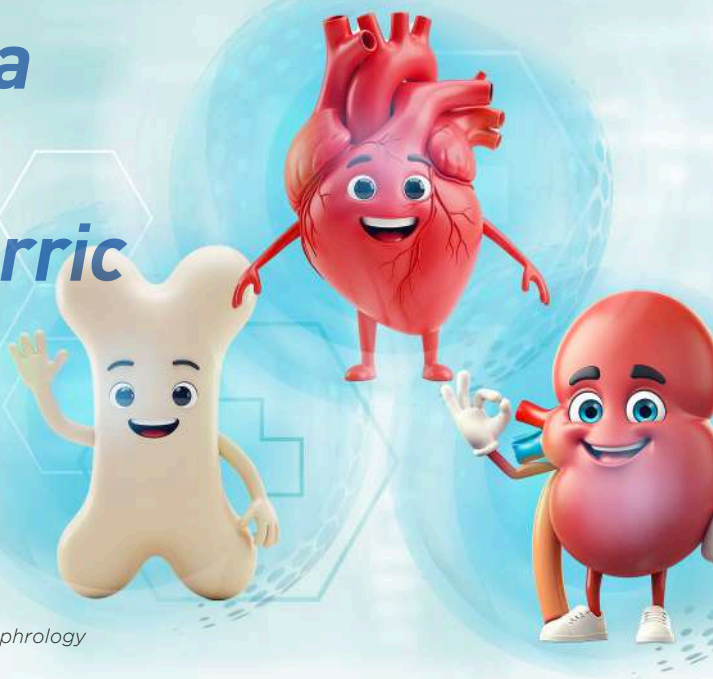
‡ Final OS assessment will be formally assessed at the final analysis[2]

Abbreviations: CI, confidence interval; D, durvalumab; EFS, event-free survival; FLOT, 5-fluorouracil, leucovorin, oxaliplatin and docetaxel; GC, gastric cancer; GC/GEJC, gastric/ gastroesophageal junction cancer; HR, hazard ratio; OS, overall survival; P, placebo; pCR, pathologic complete response; Q_W, every_weeks; SoC, standard of care

References: 1. Liu R, Hou HLY, Tse RPY, et al. *Hong Kong J Radiol*. 2025;28(1):e4-13. **2.** Janjigian YY, Al-Batran A-E, Wainberg ZA, et al. Meeting Abstract LBA5. *J Clin Oncol*. 2025;43:suppl 17. Presented at: 2025 ASCO Annual Meeting. **3.** Lavacchi A, Fancelli S, Buttitta E, et al. *Int. J. Mol. Sci*. 2023;24:4877. **4.** US National Library of Medicine. Assessing Durvalumab and FLOT Chemotherapy in Resectable Gastric and Gastroesophageal Junction Cancer. Available at: https://clinicaltrials.gov/study/NCT04592913. Accessed: 17 July 2025.

by Dr. Jessica Hui

Hyperphosphatemia Control in Dialysis: The Role of Sucroferric Oxyhydroxide



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Hyperphosphataemia is a hallmark of chronic kidney disease–mineral and bone disorder (CKD-MBD), contributing significantly to vascular calcification, cardiovascular morbidity, and mortality in dialysis patients[1-2]. Effective management of elevated serum phosphate is therefore a central goal in CKD-MBD care[3]. Accordingly, sucroferric oxyhydroxide (SFO) offers a practical solution by delivering reliable phosphate control with a lower daily pill burden, addressing key barriers to adherence seen with traditional binders[3]. At a recent symposium, Professor Markus Ketteler discussed clinical evidence and real-world insights on optimizing hyperphosphataemia management with SFO and shared his insights into more effective, patient-friendly, and sustainable treatment strategies for dialysis patients, ultimately aiming to reduce cardiovascular risk and improve quality of life in this vulnerable population.

Efficacy and Practical Benefits of Sucroferric Oxyhydroxide Compared to Sevelamer

Sucroferric Oxyhydroxide (SFO) is an oral, non-calcium, potent iron-base phosphate binder developed to selectively bind dietary phosphate in the gut and hence to control serum phosphorus levels[3]. Apart from controlling serum phosphorus level, SFO has been reported to enhance patient adherence by reducing pill burden[3]. Clinical evidence from a pivotal phase 3 randomized trial of 1,055 dialysis patients with hyperphosphataemia showed that SFO (PA21) achieved non-inferior efficacy compared to sevelamer carbonate, a widely used calcium-free binder[3]. After 12 weeks, serum phosphorus reductions were −0.71 mmol/L with PA21 and −0.79 mmol/L with sevelamer, and efficacy was maintained through 24 weeks (**Figure. 1**)[3]. Non-adherence rates were also lower for PA21 at 15.1% versus 21.3% for sevelamer[3].

Regarding safety profile, although numerically higher rates of treatment-emergent adverse events were observed in SFO compared to sevelamer (83.2% vs. 76.1%), most adverse events were mild and predictable[3]. Mild, transient diarrhea and discolored feces were more frequent with SFO, whereas nausea and constipation were more frequent with sevelamer[3]. Prof. Ketteler shared another study which suggested that SFO only led to modest increases in serum ferritin and transferrin saturation that plateaued without evidence of ongoing accumulation, while hemoglobin levels remained stable, supporting its long-term safety in routine care[4]. Importantly, SFO achieved comparable serum

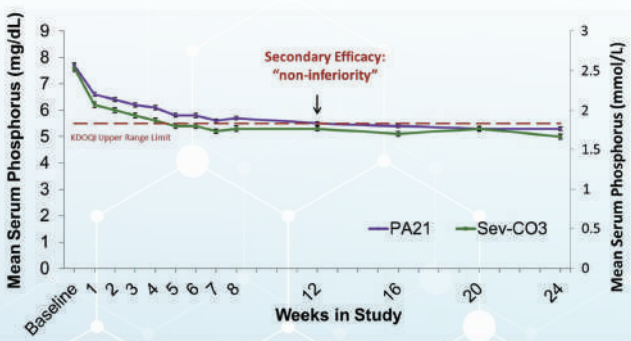

Figure 1: Mean (SEM) Serum Phosphorus in Stage 1[3]

phosphorus control with sevelamer with a significantly lower pill burden of about three tablets per day while eight tablets were needed for sevelamer (**Figure. 2**)[3]. It is crucial to realize the issue of polypharmacy among CKD patients that some patients may take a median of 19 tablets daily[3].

Expanding the Role of SFO in Comprehensive Dialysis Care

Beyond lowering phosphate, SFO showed important benefits for cardiovascular health and mineral metabolism[5,6]. In over 500 dialysis patients treated for one year, SFO or sevelamer reduced serum phosphate by about 30% (P < 0.001) and lowered median fibroblast growth factor 23 (FGF-23) by 64% (P < 0.001), indicating potential cardiovascular risk reduction[5]. Moreover, SFO treatment resulted in a significant reduction in serum intact parathyroid hormone (iPTH) at 24 weeks (P < 0.001), with stable calcium and bone turnover markers[5]. The results thus supported SFO as an effective and well-integrated option for managing CKD-MBD[5]. In the post hoc analysis of 1,059 dialysis patients over 52 weeks, SFO maintained the iPTH-lowering effect of oral vitamin D receptor agonists, with iPTH decreased by -2.6 pmol/L compared to an increase of +9.5 pmol/L with sevelamer (**Figure. 3**)[6]. This difference suggested sevelamer may bind and reduce oral vitamin D absorption, while SFO preserves vitamin D receptor activator (VDRA) efficacy, supporting more consistent PTH control and making it a compatible choice for patients needing active vitamin D therapy[6].

Besides, Prof. Ketteler highlighted that SFO provided strong efficacy in peritoneal dialysis (PD) patients, where this is especially relevant in PD-first regions like Hong Kong[7]. In a 52-week sub-analysis from the initial Phase 3 (pivotal trial) and extension studies, SFO achieved comparable phosphate-lowering to sevelamer with mean reductions of −0.6 mmol/L at 12 weeks, and 62.5% vs. 64.3% of patients maintained levels below the KDIGO target of ≤1.78 mmol/L (**Figure. 4**)[7]. In addition

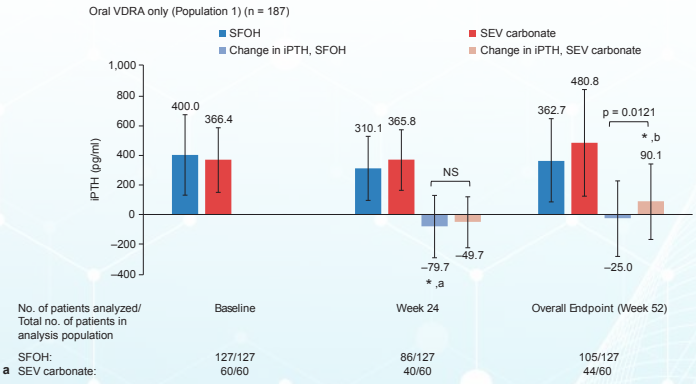

Figure 3: *Comparing PTH outcomes with oral*[6]
** Indicates a statistically significant change from baseline: [a]p = 0.0007, [b]p = 0.0222*

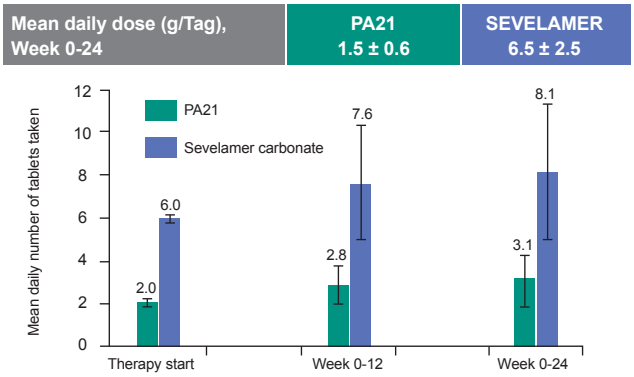

Figure 2: *Pill burden comparison*[3]

to a much lower daily pill burden (3.4 ± 1.3 vs. 8.1 ± 3.7 tablets), SFO yielded a better adherence (91.2% vs. 79.3%) than sevelamer[7]. The results further supported that SFO was a practical, effective, and well-tolerated option for PD patients[7].

Exploring Phosphate Targets and Binder Strategies: Insights from the EPISODE Trial

In the EPISODE trial, which aimed to compare the effects of SFO or lanthanum carbonate and examine the effect of strict control of phosphate on coronary artery calcification, 160 dialysis patients were randomized to receive SFO or lanthanum carbonate (LC) under standard (1.60-1.92 mmol/L) vs. stricter (1.12-1.45 mmol/L) phosphate targets over 12 months[8]. Baseline phosphate was 1.91 mmol/L in the LC group, 1.92 mmol/L in the SFO group, 1.93 mmol/L in the standard group, and 1.90 mmol/L in the strict group, with normal calcium and low PTH, ensuring balanced groups[8]. Both binders effectively lowered phosphate, with strict target arms achieving around 1.50 mmol/L versus 1.77 mmol/L in standard arms[8]. Importantly, while there was no significant difference in coronary artery calcification scores (CACS) progression between SFO and lanthanum, patients in the strict phosphate target group had significantly less CACS progression, with median percentage changes of 8.5% compared to 21.8% in the standard group (P = 0.006), and similar benefits seen in absolute score changes (P = 0.012)[8]. Notably, SFO showed slightly better absolute CACS reduction than lanthanum, possibly reflecting adherence advantages given its lower pill burden (**Figure. 5**)[8]. Prof. Ketteler elaborated that, while both binders are effective, achieving tighter phosphate targets is key to slowing vascular calcification, underscoring SFO's role as a practical, potent option in optimizing cardiovascular outcomes for dialysis patients[8].

Case Study: Importance of Individualized SFO Dosing

To illustrate the efficacy of SFO in practical settings, Prof. Ketteler shared the case of a 56 year old male patient with IgA nephropathy who valued independence

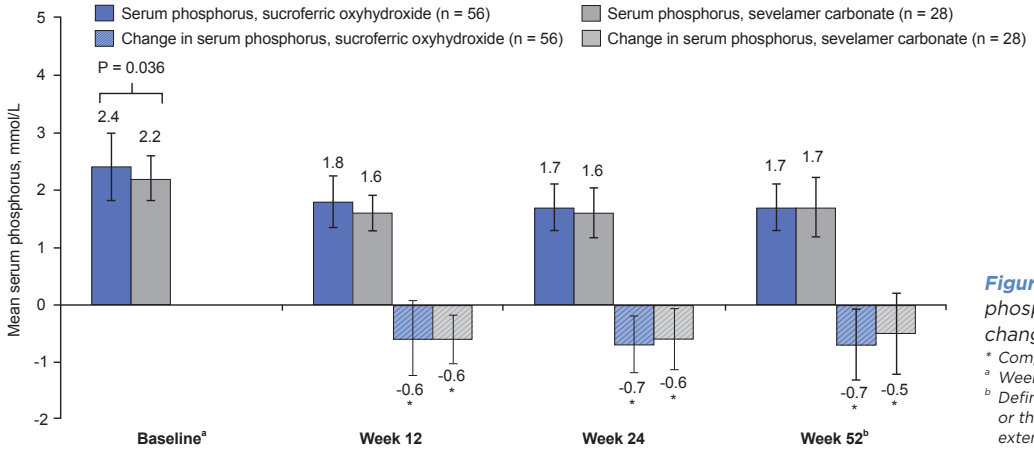

Figure 4: *Mean (SD) serum phosphorus concentration and change from baseline*[7]
* *Compared with baseline, P<0.001.*
[a] *Week 0 in initial Phase 3 study.*
[b] *Defined as extension study week 28 result or the latest available measurement after extension study baseline.*

and switched from hemodialysis to PD to continue working in 2014. Initially, phosphate was well controlled at 1.76 mmol/L on calcium acetate and sevelamer, with cinacalcet and antihypertensives. Unfortunately, in 2016, subsequent decline in residual renal function led to an increase in serum phosphate to 2.4 mmol/L and iPTH to 46.7 pmol/L, despite escalating sevelamer doses that caused high pill burden, constipation, and poor appetite, reducing adherence. Awaiting transplant with existing vascular calcification, he required better phosphate control.

In November 2016, the team switched to SFO for its lower pill burden, but initial full-dose therapy caused black diarrhea, leading him to stop treatment. A gradual reintroduction, which started with 500 mg once daily and slowly increasing was able to restore tolerance. By March 2017, phosphate was well controlled at 1.53 mmol/L with stable iPTH and calcium. This experience emphasized the need for individualized SFO dosing, especially in frail or elderly patients, to improve tolerability and adherence. It underscored the importance of tailoring phosphate binder therapy to patient needs, helping inform the design of the VERIFIE study to guide real-world SFO use in dialysis care.

VERIFIE Study Results: Real-World Safety and Effectiveness

The VERIFIE study enrolled over 1,300 dialysis patients across 172 European centers to evaluate the safety and effectiveness of SFO in routine care[9]. Patients averaged 62 years of age and were 67% male, mostly on hemodialysis[9]. Around 62% had prior phosphate binder use, mainly sevelamer or calcium-based agents[9]. Notably, 45% (n = 617/1365) remained on concomitant binders even after starting SFO, reflecting the complexity of real-world phosphate management[9]. Safety data showed that 39% (n = 531/1365) of patients experienced adverse drug reactions[9]. Gastrointestinal effects were most common (32%; 436/1365), including discolored stools in 9% (128/1365) and diarrhea in 14% (194/1365), usually mild to moderate and resolving quickly. Importantly, no diagnostic delays from stool discoloration were reported[9]. Iron parameters like serum ferritin and transferrin saturation rose modestly but stayed within safe ranges[9].

Prof. Ketteler pointed out that this study was able to demonstrate effective phosphate control with low pill burden and good adherence[9]. Results were consistent to the pivotal phase 3 trial, mean serum phosphate fell significantly from baseline to Month 1 (P<0.001), with average reductions of 0.13 mmol/L, which maintained long term[9]. The proportion of patients achieving KDIGO's ≤ 0.57 mmol/L target rose from 29.9% (baseline) to 63.0% (Month 30) during follow-up (**Figure. 6A**)[9]. In the VERIFIE study, SFO treatment was associated with a low mean pill burden of approximately

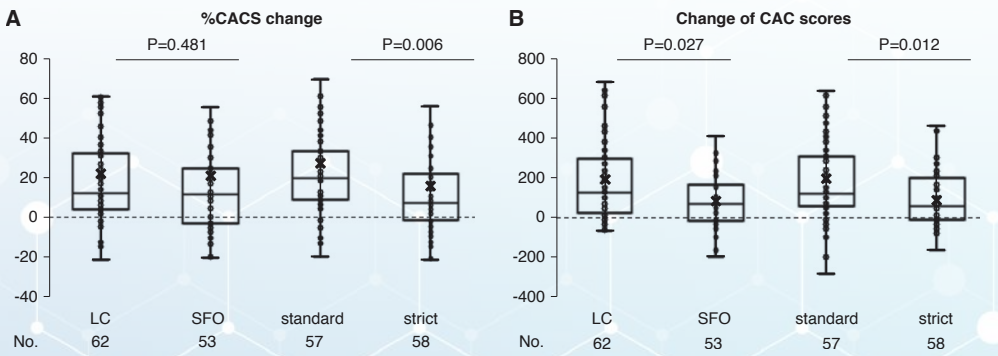

Figure 5: *(A) Percent change and (B) absolute change in coronary artery calcification scores*[8]

2.3 tablets per day over the study, which is around half the pill burden of standard therapies, supporting easier adherence in dialysis care[9]. Importantly, adherence was high: over 48% of patients consistently scored "very adherent" on the Morisky questionnaire, while fewer than 14% scored as poorly adherent at any time point (**Figure. 6B**)[9]. Therefore, even patients with prior binder use or longer dialysis duration maintained this low daily tablet count[9].

SFO: Advancing Practical Solutions for Phosphate Control in Hyperphosphataemia

In summary, Prof. Ketteler underscored the role of mineral metabolism disturbances in CKD-related cardiovascular disease, including vascular calcification and osteoporosis[10]. Hyperphosphatemia was reaffirmed as a major cardiovascular and mortality risk factor in dialysis patients[10]. Clinical trials and real-world studies confirm the comparable efficacy of SFO treatment to traditional binders, benefits for cardiovascular health, and compatibility with vitamin D therapy[3,5,6,8,9]. The flexible dosing of SFO treatment improves tolerability, especially in vulnerable patients, while reliably lowering serum phosphate, minimizing iron accumulation, and supporting better adherence[3,4,5,7,9]. At the end, Prof. Ketteler stated that, in his opinion, SFO is currently the most powerful phosphate binder among available phosphate binders, and SFO stands out for its strong efficacy, low daily pill burden, and patient-friendly use[3,4,5,7,9].

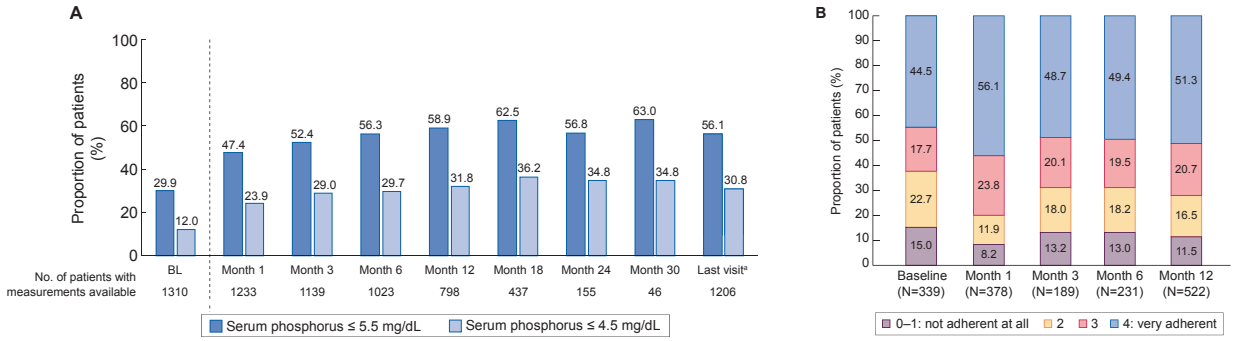

Figure 6: *(A) Serum phosphate (mg/dL), (B) target achievement, and (C) adherence rates - Morisky questionnaire with SFO over time*[9]
***P<0.01, ***P<0.001 versus BL.*
[a]To account for the effect of premature discontinuations, data for all patients at the last completed observation time point were summarized by a final follow-up: 'last visit'.

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References

1. Floege J, et al. *Nephrol Dial Transplant*. 2011;26(6):1948-55. **2.** Giachelli CM, et al. *Kidney Int*. 2009;75(9):890-7. **3.** Floege J, et al. *Kidney Int*. 2014;86(3):638-47. **4.** Floege J, et al. *Nephrol Dial Transplant*. 2015;30(6):1037-46. **5.** Ketteler M, et al. *Nephrol Dial Transplant*. 2019;34(7):1163-70. **6.** Sprague SM, et al. *Am J Nephrol*. 2016;44(2):104-12. **7.** Floege J, et al. *Nephrol Dial Transplant*. 2017;32(11):1918-26. **8.** Isaka Y, et al. *J Am Soc Nephrol*. 2021;32(3):723-35. **9.** Vervloet MG, et al. *Clin Kidney J*. 2021;14(7):1770-79. **10.** Ketteler M, et al. *Kidney Int*. 2025;107(3):405-23.

by Dr. Roy Lau

Mitigating HCC Risk through Managing HBV Infection – The Insights from the Updated EASL Guidelines

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Chronic hepatitis B (CHB) is one of the leading causes of hepatocellular carcinoma (HCC), cirrhotic complications and liver-related death worldwide. Therefore, controlling chronic hepatitis B virus (HBV) infection is crucial for reducing the risk of HCC and other liver-related complications. According to existing clinical evidence, nucleos(t)ide analogues (NAs) are effective in controlling HBV, with entecavir (ETV), tenofovir disoproxil fumarate (TDF), and tenofovir alafenamide (TAF) being recommended as first-line therapies for managing CHB in clinical guidelines[1]. Recently, large-scale clinical evidence has shown the comparative efficacy of the 3 first-line therapies. Of importance, the updated EASL Clinical Practice Guidelines on the management of HBV infection have already been released. To uncover the clinical implications of the trial data and the updated EASL Guidelines in local practice, Prof. Grace Wong was invited to share her opinions in manging CHB and the updated Guidelines.

Translating Research Findings into Clinical Benefits

"TAF is very potent and safe in treating CHB patients, particularly those with comorbidities in bone and kidney," Prof. Wong noted. TAF has been used in local clinical practice for several years, with promising safety and efficacy. She addressed that TAF is relatively new among the therapies for CHB, and thus, long-term clinical data of the medication in reducing the risks of cancer and other complications are highly desirable. In this regard, a cohort study by Yoo *et al*. (2024) involving claim data of 75,816 patients with treatment-naïve HBV was conducted to evaluate and compare the effects of TAF, TDF, and ETV on HCC incidence[2].

After propensity score (PS) matching, patients who received TAF had a lower HCC incidence compared with the TDF group (12.38 vs 15.39, p<0.001), but not with the ETV group (incidence rate ratio [IRR]: 1.08, p=0.219). Remarkably, in patients with cirrhosis, TAF had a significantly lower HCC incidence compared with TDF (30.25 vs 39.56, p=0.001) and ETV (30.25 vs 38.51, p=0.003, **Figure 1A**). In patients without cirrhosis, the TAF group had a lower HCC incidence compared with the TDF group (IRR: 1.19, p=0.030) but not the ETV group (p=0.066, **Figure 1B**). Nonetheless, Cox regression analysis showed that the TAF group had a significantly lower HCC incidence compared with the TDF (hazard ratio [HR]: 1.335, p<0.001) and ETV groups (HR: 1.162, p=0.011), after adjusting for age, gender, and cirrhosis status[2]. Therefore, the study concluded that TAF is associated with a lower HCC incidence in patients with chronic HBV compared with TDF and ETV. Essentially, there was a significant HCC reduction with TAF in patients, regardless of their cirrhosis status[2].

Prof. Wong expressed that the findings provided strong evidence on the efficacy of TAF relative to TDF and ETV, which has strengthened the confidence of front-line physicians in recommending TAF to their patients. Notably, Prof. Wong highlighted that the therapy has to be very effective to yield significant differences with other therapies among non-cirrhotic patients. Given that TAF is safe and effective in reducing HCC risk among CHB patients, regardless of their liver cirrhosis status, Prof. Wong opined that TAF offers a convenient option for physicians, as it can be prescribed to most CHB patients.

Recommendations in the Updated EASL Guidelines for Patients with Decompensated Liver Cirrhosis

According to Prof. Wong, the management of CHB patients with decompensated cirrhosis is very challenging since they are highly susceptible to complications. "If a patient with decompensated liver cirrhosis suffered urinary tract infection (UTI), complications in the liver, kidneys, and other organs would likely occur, whereas the subsequent treatment would be complicated due to the interactions among organs," she explained.

The updated EASL Guidelines on the management of HBV infection emphasise the importance of early diagnosis, risk stratification based on viral and host factors, and tailored antiviral therapy. Remarkably, the Guidelines recognised that NA treatment significantly reduces the risk of HCC. This protective effect becomes apparent after maintaining HBV DNA suppression for over a year. Moreover, the Guidelines recommended that NA therapy facilitates recompensation and can lead to significant clinical improvement in patients with cirrhosis[3].

Prof. Wong emphasised that extra care is needed in selecting therapies for patients with cirrhosis in order to prescribe the safest therapy to control CHB at the earliest instance. "A potent medication for rapid control of CHB is crucial, but we don't want the medication to adversely affect the other organs, particularly bones and kidneys," she noted. In the previous version of the EASL Guidelines, recommendations on the use of TAF in patients with cirrhosis were inconclusive. In contrast, the updated EASL Guidelines advocated TAF, alongside TDF and ETV, to be used as first-line NA therapy for managing CHB and should be used in patients with decompensated cirrhosis (**Table 1**). Importantly, the Guidelines recommended that TAF should be preferred over TDF in patients with hypophosphatemia, osteopenia/osteoporosis, renal insufficiency or risk factors for TDF-related nephrotoxicity[3]. Hence, Prof. Wong stated that the updated recommendation encourages physicians to select TAF. She further advised that early TAF treatment is preferable to improve liver conditions, which in turn reduces the need for liver transplantation.

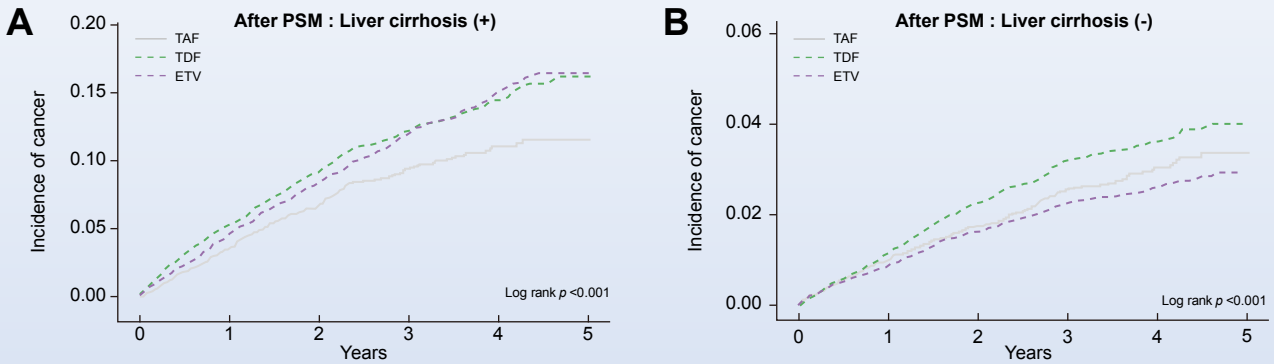

Figure 1: Cumulative incidence of HCC after propensity score matching (PMS) among A) patients with liver cirrhosis, and B) patients without liver cirrhosis[2]

The Preferred Therapy at the First Instance

The updated EASL Guidelines recommended that TDF, TAF, and ETV are suitable for various HBsAg-positive populations. However, a practical question for physicians treating their CHB patients is how to select the most appropriate option among the three. "While ETV was commonly used in the past, more physicians prefer using TAF since it became available in Hong Kong," Prof. Wong mentioned. Notably, it is crucial to realise that treatment with ETV is associated with a higher risk of resistance in patients previously treated with lamivudine, regardless of the presence or absence of lamivudine resistance[4]. Thus, ETV is not a preferred option for patients who received lamivudine.

While the EASL Guidelines do not recommend the use of ETV during pregnancy[3], Prof. Wong advised that, when treating younger patients who plan to become pregnant, tenofovir-based therapies are required by virtue of established clinical evidence. If bone or renal risk factors exist, TAF is recommended. The clinical performance of TAF in pregnant women was demonstrated in the prospective study by Chen *et al*. (2022) involving 98 pregnant women with HBV infection. 31 participants initiated TAF treatment in early pregnancy, and 57 in middle pregnancy. At delivery, 100% of the mothers achieved HBV DNA levels <200,000 IU/L. Among the 98 infants born, none had congenital defects or malformations. The mother-to-child (MTC) transmission rate was 0%[5]. Thus, the results suggested that TAF is safe for both mothers and infants and is effective for controlling maternal disease and interrupting MTC transmission.

Apart from pregnancy, Prof. Wong further highlighted the issue of older patients. "Many patients with chronic liver diseases are at an older age, and frequently with various risk factors, such as hypertension, diabetes mellitus (DM), and chronic kidney disease (CKD)," she addressed. Accordingly, the updated EASL Guidelines recommended that TAF is preferred over TDF in patients with risk factors including decompensated cirrhosis, a decreased estimated glomerular filtration rate (eGFR), poorly controlled hypertension, proteinuria, DM, glomerulonephritis, nephrotoxic drugs and organ transplantation[3]. Provided the demonstrated efficacy and safety, and patients' risk of complications, Prof. Wong suggested that TAF is the preferred choice for patients with decompensated liver cirrhosis.

Optimising Tailored Antiviral Therapy

Although numerous clinical data are suggesting TAF as the preferred therapy in controlling CHB, many patients are still receiving TDF, ETV, or other therapies. Thus, emerging studies aim to evaluate the outcomes of switching from conventional therapies to TAF. For instance, a recent study by Wang *et al*. (2024) involving 190 CHB patients reported that patients who received ETV exhibited a significantly lower mean eGFR than those who received TAF (109.93 ml/min/1.73m^2 vs 115.12 ml/min/1.73m^2, p=0.007). Moreover, 7 (9.21%) patients in the ETV group were switched from ETV to TAF at week 48 due to eGFR abnormality. Interestingly, the mean eGFR of these patients increased at 24 weeks post-switching, whereas the change in eGFR from week 48 to week 72 in patients switched from ETV to TAF was significantly larger than that of patients who continued ETV (p=0.015, **Figure 2**)[6]. Hence, the findings suggested that switching from ETV to TAF would likely improve renal function among ETV-treated patients.

Prof. Wong suggested monitoring the conditions of patients treated with ETV, especially those with bone, renal, and liver conditions, and switching to TAF may be considered as appropriate. She further summarised the recommendations regarding switching therapy in the updated EASL Guidelines into 3 key aspects. The first aspect is safety. "While a patient is on TDF, the patient's renal function has to be well monitored, especially among older patients. Switching to TAF is recommended if declined renal function is noticed," she noted.

The second aspect is about pregnancy. As mentioned, switching to tenofovir-based treatments is recommended for patients who are planning to have a pregnancy. TAF should be selected if they have the related risk factors for complications. The third aspect concerns the HCC risk. For patients with HCC who have undergone surgical treatment, the updated EASL Guidelines recommend tenofovir-based treatments as tertiary prophylaxis to prevent HCC recurrence. "Although TDF is recommended in the Guidelines, TAF is preferred as most of the HCC patients are at older ages with risk factors," Prof. Wong addressed.

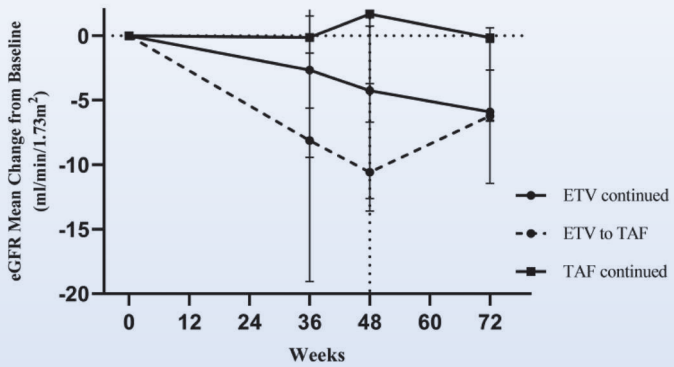

Figure 2: Increased eGFR upon switching from ETV to TAF at week 48[6]

Final Remarks

The promising clinical trial data on antivirals in controlling CHB have been recognised by authorities worldwide, which facilitates the optimisation of clinical practice. Accordingly, the updated EASL Guidelines allow physicians to prescribe TAF to most CHB patients to reduce their HCC risk. Prof. Wong concluded that TAF, TDF, and ETV are all beneficial for patients with HBV viral load and liver enzymes above the normal range. Nonetheless, if risk factors occur, such as hypertension, DM, and a family history of the comorbidities, TAF has been reported in large-scale clinical trials to be the most effective and safe option to reduce HCC risk.

First-line Treatment
• ETV, TDF, or TAF should be used as first-line NA therapy. However, comorbidities (especially renal insufficiency and reduction in bone density), concomitant circumstances (e.g. pregnancy, patient's age), and previous therapies (e.g. lamivudine) should be considered when selecting among the 3 therapies. • HBsAg-positive patients with decompensated cirrhosis or acute-on-chronic liver failure (ACLF) should be treated with ETV or tenofovir (TDF, TAF), irrespective of HBV DNA levels. PEG-IFNα should not be used in patients with decompensated cirrhosis or ACLF.
• Treatment with TDF should be switched to ETV or TAF if eGFR decreases, and in case of hypophosphatemia or osteoporosis. Previous therapies and resistance should be taken into account when choosing the NA • In the event of a partial virological response, virological non-response or virological resistance, the following treatment adjustments are recommended: · Switch to tenofovir (TDF or TAF) if an NA was previously used. · Switch to ETV or tenofovir (TDF or TAF) if adefovir was previously used. · Switch to or add-on ETV if tenofovir (TDF or TAF) was previously used. • In case of persistent low-level HBV DNA (<2,000 IU/ml) or blips during treatment with tenofovir (TDF or TAF) or ETV, treatment does not need to be immediately adjusted in the absence of advanced liver fibrosis and when resistance has been excluded.
Treatment for Pregnant Women
• Tenofovir (TDF, TAF) should be continued. • ETV or adefovir should be switched to tenofovir (TDF, TAF). • Treatment with PEG-IFNα should be switched to tenofovir (TDF, TAF). • Treatment to prevent mother-to-child transmission should ideally be started before the last trimester of pregnancy. Tenofovir (TDF, TAF) should be used during pregnancy.
Prophylaxis of HBV Reactivation after Liver Transplantation
• ETV or tenofovir (TAF or TDF) should be used. • The duration of NA prophylaxis is not well-defined. However, NA therapy should be administered for at least 6-12 months (at least 18 months in high-risk settings) after completing immunosuppressive therapy. • All patients who receive a liver transplant from an HBsAg-positive donor should be treated with a highly potent NA (ETV, TDF, TAF).

Table 1. Highlights of the Updated EASL Guidelines Regarding the Use of TAF[3]

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References

1. Wong GLH, Lemoine M. The 2024 updated WHO guidelines for the prevention and management of chronic hepatitis B: Main changes and potential implications for the next major liver society clinical practice guidelines. *J Hepatol* 2025; 82: 918–25. **2.** Yoo HJ, Kim JY, Yoo JJ, Lee HW, Kim SG, Kim YS. Lower incidence of hepatocellular carcinoma with tenofovir alafenamide in chronic hepatitis B: Evidence from a large-scale cohort. *JHEP Reports* 2025; 7: 101268. **3.** Cornberg M, Sandmann L, Jaroszewicz J, et al. EASL Clinical Practice Guidelines on the management of hepatitis B virus infection. *J Hepatol* 2025; published online May 10. DOI:10.1016/J.JHEP.2025.03.018. **4.** Lee JH, Cho Y, Lee DH, et al. Prior Exposure to Lamivudine Increases Entecavir Resistance Risk in Chronic Hepatitis B Patients without Detectable Lamivudine Resistance. *Antimicrob Agents Chemother* 2014; 58: 1730. **5.** Chen R, Zou J, Long L, et al. Safety and Efficacy of Tenofovir Alafenamide Fumarate in Early-Middle Pregnancy for Mothers With Chronic Hepatitis B. *Front Med (Lausanne)* 2022; 8. DOI:10.3389/FMED.2021.796901. **6.** Wang L, Ma S, Liu L, Wan X, Zhang Y, Ge S. Renal Function Comparison Between Entecavir and Tenofovir Alafenamide in Treatment-naïve Chronic Hepatitis B. *AASLD The Liver Meeting* 2024; : 1314.

by Dr. Jessica Hui

Enhancing Prostate Cancer Diagnosis and Personalized Treatment Through Artificial Intelligence and Meta-Data Analytics

Prostate cancer (PCa) is one of the most common malignancies in men worldwide, with incidence projected to rise from 1.4 million in 2020 to 2.9 million by 2040 due to aging populations and increased life expectancy[1]. In Hong Kong, PCa was the third most common cancer in men in 2022, accounting for 16% of male cancer diagnoses with 2,758 new cases, and the fourth leading cause of male cancer deaths with 519 deaths[2]. From 2012 to 2022, new cases increased by 69%[2]. In China, the burden is also growing rapidly, with 134,200 new cases and 47,500 deaths reported in 2022, and annual increases in age-standardized incidence and mortality of 7.0% and 4.1%, respectively[3].

Despite advances such as multi-parametric MRI, PCa screening and diagnosis remain challenged by overdiagnosis and overtreatment, with estimates ranging from 1.7% to 67% depending on population and method[4]. Variability in practice, inter-observer differences, and inconsistent staging contribute to unnecessary biopsies, treatment-related morbidity (e.g. erectile dysfunction), reduced quality of life, and increased healthcare costs[5]. This underscores the need to refine and standardize diagnostic pathways and enable more personalized, risk-adapted treatment.

Recent growth in large-scale clinical, imaging, and molecular data, along with advances in artificial intelligence (AI) such as computer vision and large language models (LLMs), offers a path to transform precision oncology[1]. For PCa, a disease marked by heterogeneity, AI and meta-data analytics, analysis of information that describes the data, hold particular promise to improve diagnostic accuracy and support truly personalized treatment strategies.

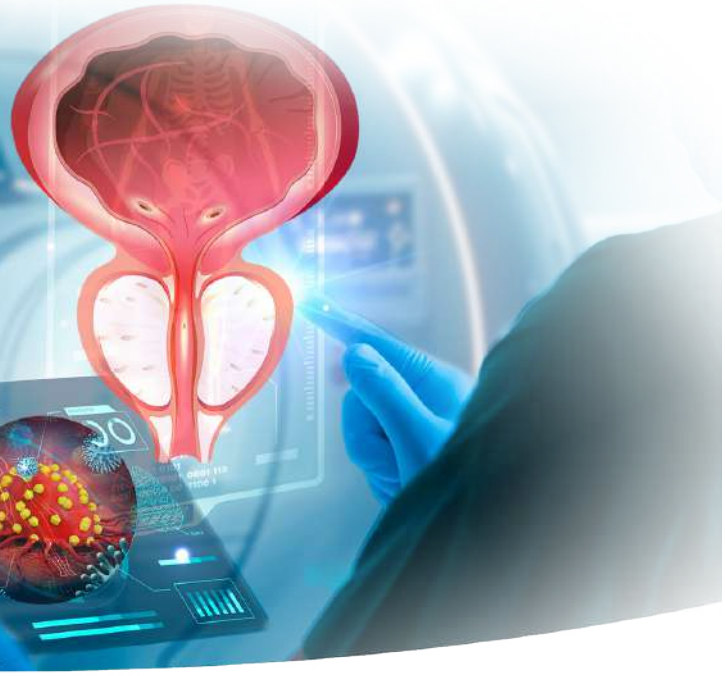
AI in Diagnostics and Risk Stratification

AI is advancing the diagnosis of localized PCa and supporting more precise risk assessment. Deep learning (DL) methods applied to imaging and pathology can detect complex, subtle features in high-resolution scans that might be missed by the human eye, helping radiologists and pathologists deliver more accurate diagnoses and consistent risk stratification.

Imaging

AI and advanced analytics are improving PCa imaging by enhancing detection accuracy, risk stratification, and treatment planning. There is increasing interest in using MRI alone to identify clinically significant PCa (csPCa), driving development of AI-based methods for automated segmentation and lesion detection[1]. These methods leverage multiparametric MRI (mpMRI), which combines T2-weighted imaging for detailed anatomy, diffusion-weighted imaging for cellular density and tumor aggressiveness, and dynamic contrast-enhanced imaging to assess vascularity[1].

The Prostate Imaging Reporting and Data System (PI-RADS) is the global standard for interpreting prostate MRI, scoring lesions from 1–2 (low likelihood of csPCa)



to 4–5 (high likelihood), with PI-RADS 3 representing an equivocal category that creates diagnostic challenges[6]. Recent studies show machine learning models can match or surpass PI-RADS in distinguishing csPCa from clinically insignificant disease[7]. DL models also help standardize PI-RADS scoring, reducing interobserver variability that leads to false positives and unnecessary biopsies, which carry both procedural and psychological burden[1]. For example, ResNet34, a popular deep learning model, has shown promise in automating PI-RADS classification on segmented lesions (**Figure. 1**)[6].

AI applications have also been explored for predicting Gleason grades, which is a key prognostic marker for localized PCa, from MRI images (**Figure. 2**); although current approaches face challenges in generalizability due to their reliance on histopathology for training[1,8]. Saha et al. demonstrated an autonomous DL model based on U-Net architecture achieving an area under the curve (AUC) of 0.88 for detecting csPCa on MRI[9].

Beyond segmentation and scoring, AI offers broader benefits in imaging analysis. Radiomics approaches extract quantitative biomarkers such as tumor size, shape, texture, and intensity to support objective diagnosis and treatment planning[7]. Additionally, AI has also enabled converting 2D histopathology slides into 3D models to improve visualization and risk assessment[7]. DL methods bypass manual feature selection, instead modeling complex relationships between imaging and clinical outcomes directly, to enable automated segmentation, detection, and classification[7]. These tools help clinicians deliver personalized, data-driven treatment strategies tailored to individual risk profiles[7]. Importantly, several AI-powered software solutions with FDA clearance are now available to assist radiologists, reflecting growing clinical acceptance[1]. As AI continues to integrate large-scale imaging and clinical datasets, it has substantial potential to standardize diagnostic pathways, reduce unnecessary interventions, and improve patient outcomes through more precise, individualized care[1,7].

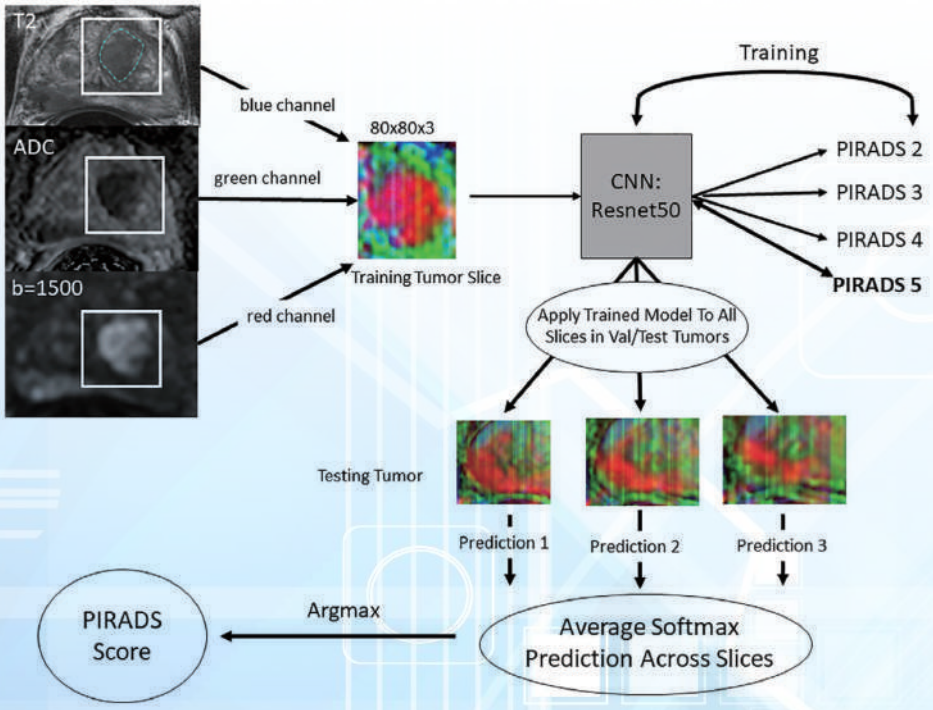


Figure 1: Workflow of ResNet34 for data processing, model training, and per-lesion model application[6]

Pathology

The standard for PCa diagnosis relies on examining biopsy specimens, with pathologists manually reviewing slides to detect cancer and assign Gleason grades, which are critical prognostic markers guiding treatment decisions[1]. However, this manual process can be time-consuming and is subject to interobserver variability[1,7]. Advances in AI have led to rapid growth in automated cancer detection using digitized whole-slide images with convolutional neural networks (CNN) frequently applied for this task[1]. Multiple studies have shown high slide-level accuracy, with AUC values exceeding 0.91. For example, Paige Prostate is the first FDA-approved AI system for automated detection in core needle biopsies, achieving sensitivity above 94% and specificity over 93% in validation studies[1].

Beyond detection, AI has been explored for automated Gleason grading to improve precision and reduce variability, achieving results comparable to or exceeding expert pathologists[1,7]. Nagpal et al. developed a DL system with diagnostic accuracy of 0.70 and high concordance among pathologists[1]. Bulten et al. trained a CNN that reached an AUC of 0.99 distinguishing benign from malignant samples in a test set of 535 biopsies, outperforming less-experienced pathologists while matching senior experts[7]. Other models such as Galen Prostate achieved an AUC of 0.941 distinguishing low- from high-grade cancer[1], while DeepDX Prostate reported high diagnostic concordance with a quadratic kappa of 0.907[1]. Integrating AI has improved workflow efficiency, reducing analysis time by approximately 65.5% while detecting PCa cases that were missed by multiple pathologists[7].

AI in Personalized Treatment

Personalized treatment in PCa has emerged as a critical advance in modern oncology, shifting care away from a one-size-fits-all approach toward strategies tailored to each patient's unique disease profile and personal goals. This approach considers genetics and genomic mutations, tumor location, volume, aggressiveness, patient age, comorbidities, and molecular or biomarker profiles to guide prevention, diagnosis, and treatment strategies, aiming to maximize effectiveness while minimizing side effects. Current practices include genetic and genomic profiling to detect DNA repair gene mutations like BRCA1/2 or ATM, supporting targeted therapy selection in advanced or metastatic disease[10]; the use of poly (ADP-ribose) polymerase PARP inhibitors such as olaparib for patients with actionable mutations[10]; biomarker-guided decisions using tests like SelectMDx to identify patients who need more aggressive treatment versus those suitable for surveillance[11]; and risk-adapted therapy that aligns treatment intensity and modality with tumor characteristics and patient preferences[12]. As AI technologies and the availability of large-scale meta-data continue to advance, there is significant potential to further refine and improve the precision of personalized treatment strategies in PCa, ensuring care is even more closely tailored to individual risk and biology.

AI-Driven Multimodal Approaches for Risk Stratification and Treatment Planning

LLMs can efficiently extract structured details from electronic health records, pathology reports, and clinical notes to support real-time clinical decision-making. Beyond text extraction, AI models using computer vision are being developed to quantify disease volume more accurately than conventional lesion-count methods, while multimodal frameworks aim to integrate imaging, genomics, patient demographics, and clinical text for more nuanced risk assessment in metastatic PCa[1]. For instance, a validated multimodal digital pathology model using data from the phase III STAMPEDE trial stratified patients by PCa–specific mortality risk[1]. In addition, Esteva et al. developed a multimodal deep learning system that integrates clinical data with unannotated biopsy histopathology, trained on five phase III trials with 5,654 of 7,764 patients (71%) and a

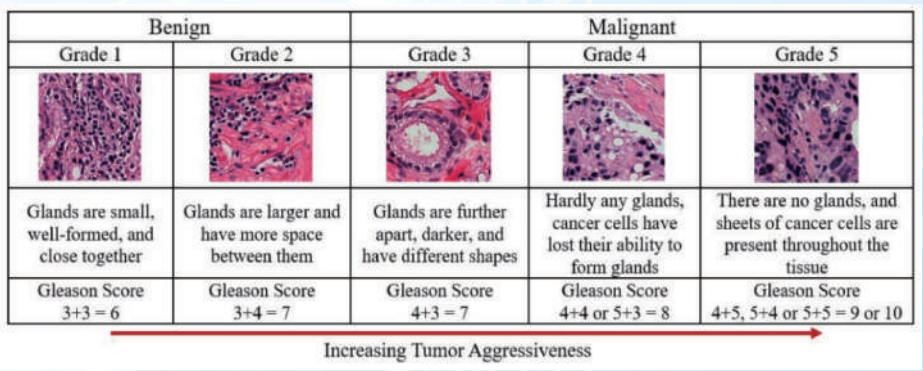


Figure 2: *Gleason scores and prostate cancer grading system*[8]

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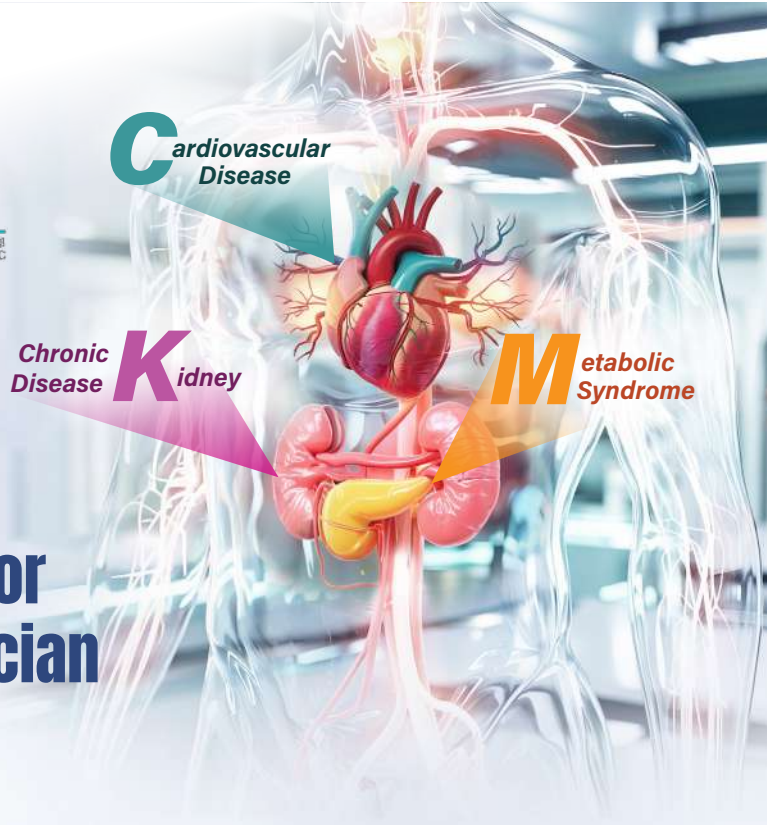

Cardiovascular-Kidney-Metabolic Syndrome: Why and How It Matters for Every Primary Care Physician

Date : 26th September 2025
Time : 12:30 pm – 2:30 pm
Venue : Peking Garden, 8/F, New Town Plaza, Phase I, Shatin

Speaker

Dr. CHOW Kai Ming

Council Member
Hong Kong Kidney Foundation
and Hong Kong Society of Nephrology
Nephrologist Specialist

Panelists

Dr. LUI Siu Fai

Chairman,
Hong Kong Kidney Foundation

Dr. WONG Tsz Kau

Medical Consultant,
Sha Tin District Health Centre Express (STDHCE)

Dr. LEUNG Kwan Wa Maria

Service Director, Primary & Community Health Care
Chief of Service, Department of Family Medicine
New Territories East Cluster, Hospital Authority

Dr. YAP Yat Hin Desmond

Honorary Secretary,
Hong Kong Society of Nephrology

Agenda

Time	Item
12:30 pm	On-site Registration
12:50 pm	Lunch
1:00 - 1:05 pm	Welcome Address
1:05 - 1:45 pm	Cardiovascular-Kidney-Metabolic Syndrome: Why and How It Matters for Every Primary Care Physician
1:45 - 2:00 pm	Webinar Q&A
2:00 - 2:30 pm	On-site Q&A

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median follow-up of 11.4 years. The model outperformed the National Comprehensive Cancer Network (NCCN) risk-stratification tool across all endpoints, achieving 9.2% to 14.6% relative improvement in discriminatory performance[13]. Unlike traditional methods requiring labor-intensive region-level annotations, this system uses self-supervised learning to extract features from histopathology slides, lowering barriers to deployment in new clinics with only digital scanners and internet access[13].

AI for Prognosis, Recurrence Prediction, and Clinical Decision Support

AI and machine learning are advancing PCa prognosis by enabling personalized predictions that inform treatment selection. Models trained on large datasets predict survival and mortality with high accuracy, such as that Bibault *et al*. developed an algorithm achieving 0.98 accuracy using 30 clinical variables[7]. Koo *et al*. constructed a neural network tool that uses data from over 7,200 patients to provide individualized 5- and 10-year survival estimates[7]. For recurrence prediction after radical prostatectomy, Tan *et al*. established an AI model that achieved an AUC of 0.894 at 5 years, while Huynh *et al*. reported an AUC of 0.89 using MRI radiomics, both surpassing traditional nomograms[7]. Web-based tools like UCSF-CAPRA and askMUSIC further help clinicians and patients visualize personalized recurrence risks and treatment choices[7].

Advancing Precision Prostate Cancer Care Through AI and Meta-Data Integration

The integration of artificial intelligence and meta-data analytics holds transformative potential for PCa care by enabling more accurate, individualized diagnosis and treatment selection. By combining clinical, imaging, genomic, and pathology data at scale, AI models deliver precise risk stratification and prognosis predictions that account for patient-specific factors often missed by traditional tools. This level of personalization helps clinicians distinguish between indolent and aggressive disease, reducing unnecessary biopsies, overtreatment, and their associated side effects, while ensuring timely, appropriate intervention for high-risk patients. Furthermore, AI-powered decision support systems and web tools improve clinician-patient communication, supporting shared, evidence-based treatment choices. As digital pathology and large-scale data resources continue to expand, AI-driven approaches promise to democratize access to precision oncology worldwide, lowering barriers to adoption and offering a practical path toward delivering safer, more effective, and truly patient-centered PCa care.

References

1. Riaz IB, Harmon S, Chen Z, Naqvi SAA, Cheng L. Applications of artificial intelligence in prostate cancer care: a path to enhanced efficiency and outcomes. Am Soc Clin Oncol Educ Book. 2024 Jun;44(3):e438516. doi:10.1200/EDBK_438516. PMID: 38935882. **2.** Hong Kong Cancer Expert Working Group on Cancer Prevention and Screening. Prostate Cancer [Internet]. Hong Kong: Cancer Expert Working Group; [cited 2025 Jul 9]. Available from: https://www.cancer.gov.hk/en/hong_kong_cancer/common_cancers_in_hong_kong/prostate_cancer.html **3.** Wang Z, Xu W, Wan F, Tian X, Anwaier A, Ye S, Zhou S, Zhang H, Qin X, Ye D. Prostate cancer in China: epidemiological trends, genomic insights, and future directions for optimized management. J Natl Cancer Cent. 2025. **4.** Loeb S, Bjurlin MA, Nicholson J, Tammela TL, Penson DF, Carter HB, Carroll P, Etzioni R. Overdiagnosis and overtreatment of prostate cancer. Eur Urol. 2014 Jun;65(6):1046-55. doi:10.1016/j.eururo.2013.12.062. PMID: 24439788; PMCID: PMC4113338. **5.** Dushimova Z, Iztleuov Y, Chingayeva G, Shepetov A, Mustapayeva N, Shatkovskaya O, Pashimov M, Saliev T. Overdiagnosis and overtreatment in prostate cancer. Diseases. 2025 May 24;13(6):167. doi:10.3390/diseases13060167. PMID: 40558578; PMCID: PMC12191725. **6.** Sanford T, Harmon SA, Turkbey EB, Kesani D, Tuncer S, Madariaga M, Yang C, Sackett J, Mehralivand S, Yan P, Xu S, Wood BJ, Merino MJ, Pinto PA, Choyke PL, Turkbey B. Deep-learning-based artificial intelligence for PI-RADS classification to assist multiparametric prostate MRI interpretation: a development study. J Magn Reson Imaging. 2020 Nov;52(5):1499-1507. doi:10.1002/jmri.27204. PMID: 32478955; PMCID: PMC8942293. **7.** Arita Y, Roest C, Kwee TC, Paudyal R, Lema-Dopico A, Fransen S, Hirahara D, Takaya E, Ueda R, Ruby L, Nissan N, Schwartz LH, Shukla-Dave A, Akin O. Advancements in artificial intelligence for prostate cancer: optimizing diagnosis, treatment, and prognostic assessment. Asian J Urol. 2025. **8.** Bhattacharjee S, Kim CH, Park HG, Prakash D, Madusanka N, Cho NH, Choi HK. Multi-features classification of prostate carcinoma observed in histological sections: analysis of wavelet-based texture and colour features. Cancers (Basel). 2019 Dec 4;11(12):1937. doi:10.3390/cancers11121937. PMID: 31817111; PMCID: PMC6966617. **9.** Saha A, Hosseinzadeh M, Huisman H. End-to-end prostate cancer detection in bpMRI via 3D CNNs: effects of attention mechanisms, clinical priori and decoupled false positive reduction. Med Image Anal. 2021 Oct;73:102155. doi:10.1016/j.media.2021.102155. PMID: 34245943. **10.** Fenton SE, et al. Advancing prostate cancer care: treatment approaches to precision medicine, biomarker innovations, and equitable access. Am Soc Clin Oncol Educ Book. 2024;44:e433138. doi:10.1200/EDBK_433138. **11.** Visser WCH, de Jong H, Steyaert S, Melchers WJG, Mulders PFA, Schalken JA. Clinical use of the mRNA urinary biomarker SelectMDx test for prostate cancer. Prostate Cancer Prostatic Dis. 2022 Sep;25(3):583-589. doi:10.1038/s41391-022-00562-1. PMID: 35810263; PMCID: PMC9385481. **12.** Hayden AJ, Catton C, Pickles T. Radiation therapy in prostate cancer: a risk-adapted strategy. Curr Oncol. 2010 Sep;17 Suppl 2:S18-24. doi:10.3747/co.v17i0.704. PMID: 20882127; PMCID: PMC2935704. **13.** Esteva A, Feng J, van der Wal D, et al. Prostate cancer therapy personalization via multi-modal deep learning on randomized phase III clinical trials. NPJ Digit Med. 2022;5:71. doi:10.1038/s41746-022-00613-w.

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MI=medical information.

References: 1. AMGEVITA™ (adalimumab) Hong Kong prescribing information (Version: HKAMGPI02). **2.** Data on file, Amgen [Biosimilars Patient Counts]; 2024. **3.** Amgen 2020 Biosimilar Trends Report. Available at: https://www.amgenbiosimilars.com/bioengage/-/media/Themes/Amgen/amgenbiosimilars-com/Amgenbiosimilars-com/pdf/USA-CBU-80962_Amgen-2021-Biosimilar-Trends-Report.pdf. Last accessed Dec 2022. **4.** Amgen Annual Repor ts. Chairman and CEO Letter and Amgen Inc. 2018 Annual Report. Available at: investors.amgen.com/financials/annual-reports. Last accessed Dec 2022. **5.** Amgen Biosimilars. Deep experience. Available at: www.amgenbiosimilars.com/heritage/deep-experience. Last accessed Dec 2022. **6.** Amgen Products. Available at: www.amgen.com/products. Last accessed Dec 2022. **7.** Amgen Biosimilars. Worldwide Biologics Leader. Available at: www.amgenbiosimilars.com/heritage/worldwide-biologics-leader. Last accessed May 2021. **8.** Amgen Biosimilars. Solution-oriented services. Available at: www.amgenbiosimilars.com/support/solution-oriented-services/. Last accessed Dec 2022. **9.** Schipper R, et al. BOPA, Birmingham, UK, 2018; Abstract 32. **10.** Amgen Pipeline. Available at: www.amgenpipeline.com. Last accessed Dec 2022. **11.** Responsibility Highlights Report 2018. Amgen. Available at:https://www.amgen.com/responsibility/reporting-and-metrics/archived-reports. Last accessed Dec 2022. **12.** AMGEVITA™ (adalimumab) instructions for use (Version: HKAMGIFUPFP02). **13.** IQVIA Report FY 2024 in Dosage Unit. **14.** Data on File – in volume and value sales.

AMGEVITA™ (Adalimumab) Abbreviated Prescribing Information
AMGEVITA™ 40 mg solution for injection in pre-filled syringe
AMGEVITA™ 40 mg solution for injection in pre-filled pen

INDICATIONSRheumatoid arthritis: Indicated for the treatment of moderate to severe, active rheumatoid arthritis in adult patients when the response to disease-modifying anti-rheumatic drugs (DMARDs) including methotrexate has been inadequate; the treatment of severe, active and progressive rheumatoid arthritis in adults not previously treated with methotrexate. AMGEVITA can be given as monotherapy or in combination with methotrexate. Polyarticular juvenile idiopathic arthritis: AMGEVITA in combination with methotrexate is indicated for the treatment of active polyarticular juvenile idiopathic arthritis, in patients from the age of 2 years who have had an inadequate response to one or more DMARDs. AMGEVITA can be given as monotherapy in case of intolerance to methotrexate or when continued treatment with methotrexate is inappropriate. Ankylosing spondylitis (AS): Indicated for the treatment of adults with severe active ankylosing spondylitis who have had an inadequate response to conventional therapy. Axial spondyloarthritis without radiographic evidence of AS: Indicated for the treatment of adults with severe axial spondyloarthritis without radiographic evidence of AS but with objective signs of inflammation by elevated CRP and/or MRI, who have had an inadequate response to, or are intolerant to non-steroidal anti-inflammatory drugs. Psoriatic arthritis: Indicated for the treatment of active and progressive psoriatic arthritis in adults when the response to previous DMARD therapy has been inadequate. Psoriasis: Indicated for the treatment of moderate to severe chronic plaque psoriasis in adult patients who failed to respond to or who have a contraindication to, or are intolerant to other systemic therapy including cyclosporine, methotrexate or PUVA. Crohn's disease: Indicated for treatment of moderately to severely active Crohn's disease, in adult patients who have not responded despite a full and adequate course of therapy with a corticosteroid and/or an immunosuppressant; or who are intolerant to or have medical contraindications for such therapies. Paediatric Crohn's disease: Indicated for the treatment of moderately to severely active Crohn's disease in paediatric patients (from 6 years of age) who have had an inadequate response to conventional therapy including primary nutrition therapy and a corticosteroid and/or an immunomodulator, or who are intolerant to or have contraindications for such therapies. Ulcerative colitis: Indicated for treatment of moderately to severely active ulcerative colitis in adult patients who have had an inadequate response to conventional therapy including corticosteroids and 6-mercaptopurine (6-MP) or azathioprine (AZA), or who are intolerant to or have medical contraindications for such therapies. **DOSAGE AND ADMINISTRATION** Rheumatoid arthritis: The recommended dose of AMGEVITA for adult patients with rheumatoid arthritis is 40 mg adalimumab administered every other week as a single dose via subcutaneous injection. Methotrexate should be continued during treatment with AMGEVITA. Glucocorticoids, salicylates, non-steroidal anti-inflammatory drugs, or analgesics can be continued during treatment with AMGEVITA. In monotherapy, some patients who experience a decrease in their response to AMGEVITA 40 mg every other week may benefit from an increase in dose to 40 mg adalimumab every week or 80 mg every other week. There may be a need for dose interruption, for instance before surgery or if a serious infection occurs. Re-introduction of AMGEVITA after discontinuation for 70 days or longer resulted in the same magnitudes of clinical response and similar safety profile as before dose interruption. Ankylosing spondylitis, axial spondyloarthritis without radiographic evidence of AS and psoriatic arthritis: The recommended dose of AMGEVITA for patients with ankylosing spondylitis, axial spondyloarthritis without radiographic evidence of AS and for patients with psoriatic arthritis is 40 mg adalimumab administered every other week as a single dose via subcutaneous injection. Psoriasis: The recommended dose of AMGEVITA for adult patients is an initial dose of 80 mg administered subcutaneously, followed by 40 mg subcutaneously given every other week starting one week after the initial dose. Crohn's disease: The recommended AMGEVITA induction dose regimen for adult patients with moderately to severely active Crohn's disease is 80 mg at week 0 followed by 40 mg at week 2. In case there is a need for a more rapid response to therapy, the regimen 160 mg at week 0 (given as four 40 mg injections in one day or as two 40 mg injections per day for two consecutive days), followed by 80 mg at week 2 (given as two 40 mg injections in one day), can be used with the awareness that the risk for adverse events is higher during induction. After induction treatment, the recommended dose is 40 mg every other week via subcutaneous injection. Alternatively, if a patient has stopped AMGEVITA and signs and symptoms of disease recur, AMGEVITA may be re-administered. Ulcerative colitis: The recommended AMGEVITA induction dose regimen for adult patients with moderate to severe ulcerative colitis is 160 mg at week 0 (given as four 40 mg injections in one day or as two 40 mg injections per day for two consecutive days) and 80 mg at week 2 (given as two 40 mg injections in one day). After induction treatment, the recommended dose is 40 mg every other week via subcutaneous injection. No dose adjustment is required in elderly. Adalimumab has not been studied in patients with renal and/or renal impairment. Polyarticular juvenile idiopathic arthritis from 2 years of age weighing 30 kg or more: The recommended dose of AMGEVITA for patients with polyarticular juvenile idiopathic arthritis from 2 years of age is 40 mg every other week. Paediatric Crohn's disease from 6 to 17 years of age weighing 40 kg or more: The recommended AMGEVITA induction dose regimen for patients with Crohn's disease is 80 mg at week 0 and 40 mg at week 2. After induction treatment, the recommended dose is 40 mg every other week via subcutaneous injection. **CONTRAINDICATIONS** Hypersensitivity to the active substance or to any of the excipients. Active tuberculosis or other severe infections such as sepsis, and opportunistic infections. Moderate to severe heart failure (NYHA class III/IV). **SPECIAL WARNINGS AND PRECAUTIONS FOR USE** Infections: Closely monitor patients for infections, including TB, before, during & after treatment. Hepatitis B reactivation: Closely monitor patients HBV carriers. Patients should be tested for HBV infection before initiating treatment with AMGEVITA. For patients who test positive for hepatitis B infection, consultation with a physician with expertise in the treatment of hepatitis B is recommended. Neurological events: Use in caution in patients with pre-existing or recent onset central or peripheral nervous system demyelinating disorders. Allergic reactions: Reports of serious allergic reactions including anaphylaxis have been received following adalimumab administration. Dry natural rubber: The needle cover of the pre-filled pen is made from dry natural rubber (a derivative of latex), which may cause allergic reactions. Immunosuppression: No evidence of depression of delayed-type hypersensitivity, depression of immunoglobulin levels, or change in enumeration of effector T-, B-, NK-cells, monocyte/macrophages, and neutrophils. Malignancies and lymphoproliferative disorders. Possible risk for the development of lymphomas, leukaemia, and other malignancies. Haematologic reactions: Rare reports of pancytopenia including aplastic anaemia have been reported Adverse events of the haematologic system, including medically significant cytopenia (e.g. thrombocytopenia, leukopenia) have been reported with adalimumab. Vaccinations: Patients on AMGEVITA may receive concurrent vaccinations, except for live vaccines. Administration of live vaccines (e.g., BCG vaccine) to infants exposed to AMGEVITA in utero is not recommended for 5 months following the mother's last AMGEVITA injection during pregnancy. Congestive heart failure: Use with caution in patients with mild heart failure (NYHA class I/II). AMGEVITA is contraindicated in moderate to severe heart failure. Treatment with AMGEVITA must be discontinued in patients who develop new or worsening symptoms of congestive heart failure. Autoimmune processes: Possible formation of autoimmune antibodies; Concomitant administration of AMGEVITA with other biologic DMARDs (e.g. anakinra and abatacept) or other TNF-antagonists is not recommended. Surgery: Patients for surgery should be closely monitored for infections. Small bowel obstruction: Available data suggest that adalimumab does not worsen or cause strictures. Elderly. **INTERACTIONS** Administration of adalimumab without methotrexate resulted in increased formation of antibodies, increased clearance and reduced efficacy of adalimumab. The combination of AMGEVITA and anakinra and the combination of AMGEVITA and abatacept are not recommended. **PREGNANCY AND LACTATION** Women of child bearing potential: Women of childbearing potential should consider the use of adequate contraception to prevent pregnancy and continue its use for at least five months after the last AMGEVITA treatment. Pregnancy: Adalimumab may cross the placenta into the serum of infants born to women treated with adalimumab during pregnancy. Consequently, these infants may be at increased risk for infection. Administration of live vaccines (e.g., BCG vaccine) to infants exposed to adalimumab in utero is not recommended for 5 months following the mother's last adalimumab injection during pregnancy. Breast-feeding: AMGEVITA can be used during breastfeeding. Fertility: Preclinical data on fertility effects of adalimumab are not available. **ADVERSE REACTIONS** Very common adverse reactions were respiratory tract infections, leukopenia, anaemia, lipids increased, headache, abdominal pain, nausea and vomiting, elevated liver enzymes, rash, musculoskeletal pain and injection site reaction. **Please read the full prescribing information prior to administration and full prescribing information is available upon request.** AMGEVITA™ and SureClick® are trademarks owned or licensed by Amgen Inc., its subsidiaries, or affiliates.
Abbreviated Prescribing Information Version: HKAMGPI02; Version date: Nov 2022

HKG-501-0425-80005-Jun-2025

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AMGEN

by Michelle Lee

Benefits of Oral Proteasome Inhibitor Therapy for RRMM

Dr. Wing-Yan Au
Specialist in Haematology & Haematological Oncology

Multiple myeloma (MM) is one of the most common haematological malignancies with a global incidence ranging from 0.5 to 5 per 100,000[1]. It is characterised by the monoclonal proliferation of malignant plasma cells in the bone marrow, leading to damage to visceral organs[2]. Not surprisingly, MM contributes to 20% of mortality among haematological malignancies worldwide[3]. The standard front-line treatment typically involves induction chemotherapy, followed by early stem cell transplantation for eligible patients, and long-term maintenance therapy[4,5]. Despite therapeutic advances, MM remains incurable with a 5-year net survival from diagnosis of 49.6%[6]. Relapsed/refractory multiple myeloma (RRMM) occurs in almost every patient with MM and has been a clinical challenge[7]. Thanks to the advancement in therapeutics, various treatment options for RRMM have been available[8]. Remarkably, ixazomib is the first and only approved oral proteasome inhibitor (PI) against RRMM[9,10]. In a recent interview, Dr. Wing-Yan Au, a specialist in haematology & haematological oncology, shared his perspectives on the efficacy and safety of PIs in managing RRMM.

The Natural Selection in RRMM

Practically, almost all MM cases will eventually relapse or become resistant to treatment resulting in RRMM[8]. The International Myeloma Working Group (IMWG) defines RRMM as a progressive disease, inadequate response despite treatment, progression within 60 days of most recent treatment in a patient who had achieved remission, absence of at least minimal response, or primary refractory disease[1].

Essentially, patients with a short duration of remission, aggressive progression or relapse, genetic mutations, inadequate response to previous treatments, plasma cell leukaemia and/or immune system dysregulation are reported to have a higher risk of RRMM[8]. Dr. Au highlighted that a new gene mutation is a key driving factor behind RRMM. The clonal structure of MM is susceptible to mutation, particularly under the evolutionary pressure during anticancer treatment. While sensitive subclones are eliminated, resistant subclones would survive and proliferate, or even acquire new mutations strengthening their resistance. The presence of resistant clones thus contributes to RRMM and suboptimal treatment outcomes[11].

General Considerations in Managing RRMM

The therapeutic strategy for RRMM integrates a holistic approach that considers patient, disease, and drug-related factors[12]. Dr. Au emphasised that the management of MM or RRMM is a long-term process due to their incurability. After the induction therapy, which aims to achieve cytoreduction as much as possible, long-term maintenance therapy and monitoring are needed[4,5]. He added that the minimally adequate dose and appropriate type of anticancer treatment is ideal for maintenance as this can alleviate patients' burden. Changing the class of anticancer drugs could be preferable when relapse occurs but continuing with a prescribed medication which has achieved a partial response (PR) and maintained for at least 6 months with a favourable toxicity profile can also be considered[12].

The Clinical Implications of the Oral PI

The individualised treatment approach for RRMM involves the evaluation of responses in previous treatments, whereas reported treatment-related adverse events (TRAEs) have to be taken into account to avoid suboptimal long-term treatment outcomes[13]. Even though Dr. Au commented that both bortezomib and carfilzomib are administered via infusion while bortezomib can be injected subcutaneously, undoubtedly, prolonged administration of parenteral therapies in clinical practice may be considered as nuisance by some RRMM patients and healthcare professionals (HCPs), due to the associated burden of toxicities and the need for patients to visit the clinic or hospital for treatment. This highlights the need for all-oral regimens with a preferable safety profile in managing RRMM[9,14].

In this regard, Dr. Au suggested considering the next generation PI, ixazomib, which is oral intake and is approved in combination with Rd (IRd) in RRMM patients who have received ≥1 prior therapy[9,10]. The efficacy of add-on oral ixazomib to Rd regimen has been demonstrated in the double-blind, placebo-controlled, phase 3 TOURMALINE-MM1 trial (N=722) that the combined treatment was associated with a significantly longer PFS by independent review

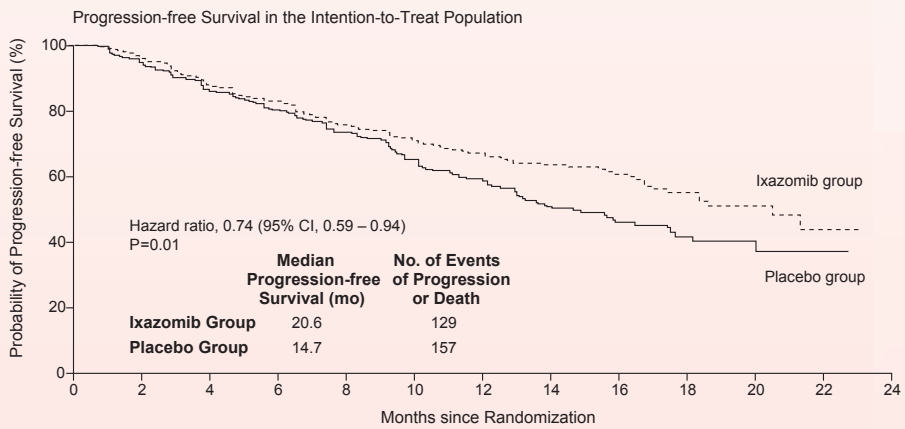

Figure 1. PFS in the ITT population[15]. CI, confidence interval; ITT, intention-to-treat; PFS, progression-free survival.

committee by 40%, compared with placebo-Rd regimen, with limited additional toxicity (median PFS: 20.6 months vs. 14.7 months; hazard ratio [HR] for disease progression or death=0.74; 95% confidence interval [CI]: 0.59-0.94; p=0.01) (**Figure 1**)[9,15].

Importantly, the IRd regimen could counteract the adverse effect of high-risk cytogenetics on PFS[16]. The ORR in IRd-treated RRMM patients was 78%, compared with 72% in the placebo group[15]. Moreover, IRd regimen appeared to be well-tolerated and without adverse effect on quality of life (QoL) reported by patients[15]. Although bortezomib and carfilzomib are associated with peripheral neuropathy, cardiac issues and renal toxicity, the incidence of these AEs is lower with ixazomib[14].

Dr. Au emphasised the convenience of oral route administration of IRd regimen potentially improved patients' adherence to long-term RRMM treatment. All-oral IRd regimen is suggested to be a more tolerable replacement for carfilzomib and bortezomib[14]. To maintain a sustained amount of PI in the body for prolonged RRMM management, Dr. Au recommended the weekly administration of a lower dose of ixazomib for RRMM patients who have difficulty visiting clinics frequently.

Long-term Benefits of Oral PI Beyond RRMM Control

To illustrate the real-life benefits of the oral ixazomib-based regimen, Dr. Au shared the case of his patient, who was a 55-year-old Chinese female with MM diagnosed in 2015. Initially, the patient presented with renal impairment, toe fracture and anaemia. She had 84% myeloma cells in the bone marrow and her unrestricted free light chains (uFLC) level exceeded 20,000 mg/L. However, fluorescence in situ hybridisation (FISH) analysis revealed no abnormalities in 17q, 1p, and 1q.

The patient was initially prescribed with bortezomib-based regimen for 16 weeks. Thereafter, the patient was referred to the Queen Mary Hospital (QMH) for bone marrow transplant (BMT). However, due to the failure in harvesting stem cell, the BMT was not pursued.

In March 2016, the patient was offered the compassionate use of oral ixazomib plus lenalidomide and dexamethasone when her uFLC was stable at 3000 mg/L, suggesting a stable disease. The initial dosage of ixazomib was 4 mg weekly, later adjusted to 3 mg and 2.3 mg weekly based on her response and tolerability. Upon the oral ixazomib-based treatment, sustained reduction in uFLC level was observed and maintained at 200-400 mg/L.

By April 2024, her myeloma cell in bone marrow had reduced to 12%. Her current maintenance treatment includes 25 mg lenalidomide three times a week and 2.3 mg oral ixazomib weekly. At the time of sharing in January 2025, Dr. Au stated that the patient's condition remained stable.

Importantly, the improvement in QoL for the patient was significant. Given the patient only needs to visit clinic occasionally for medication refills, she can travel around the world. "She needed frequent travel for job commitment and the oral treatment allowed her to work without any disturbance," Dr. Au highlighted. Accordingly, the oral ixazomib-based regimen is an ideal treatment option for managing RRMM, with a low impact on patients' daily activities as compared to conventional therapies.

Case Study Highlights

- The efficacy of the oral ixazomib-based regimen was maintained in managing RRMM
- The patient who received oral ixazomib-based regimen demonstrated stable disease
- The oral ixazomib-based regimen showed a promising long-term safety profile

The clinical case shared by Dr. Au complied with the findings in previous studies. For instance, the INSURE study, a global pooled analysis of three real-world studies (INSIGHT MM, UVEA-IXA, and REMIX) involved data of 564 IRd-treated RRMM patients, investigated the real-world effectiveness and safety of IRd in RRMM patients. The median time-to-next treatment (TTNT), duration of treatment (DOT) and PFS were 18.4, 14.0 and 19.9 months, respectively. The best ORR was found to be 64.6% without new safety concerns. Furthermore, the INSURE study indicated that the line of therapy (LoT) was associated with comparable PFS probabilities at 24 months across different LoTs, suggesting similar benefits for patients regardless of therapy line. Importantly, earlier administration of ixazomib may improve TTNT and PFS, particularly for frail patients, as the all-oral IRd regimen reduced healthcare visit requirements (**Figure 2**)[17].

Take Home Message

In summary, the efficacy and safety of advanced PI-based regimens have been demonstrated in clinical trials and in real-world studies[15,17].

Given the sustainable efficacy and low burden on the QoL of patients of oral PI-based regimen, the therapy would be an ideal option to optimise the overall wellbeing of RRMM patients.

Patient-centred treatment is crucial in prolonged RRMM management, with consideration of their compliance, cost of treatment and their response to treatment, Dr. Au stated.

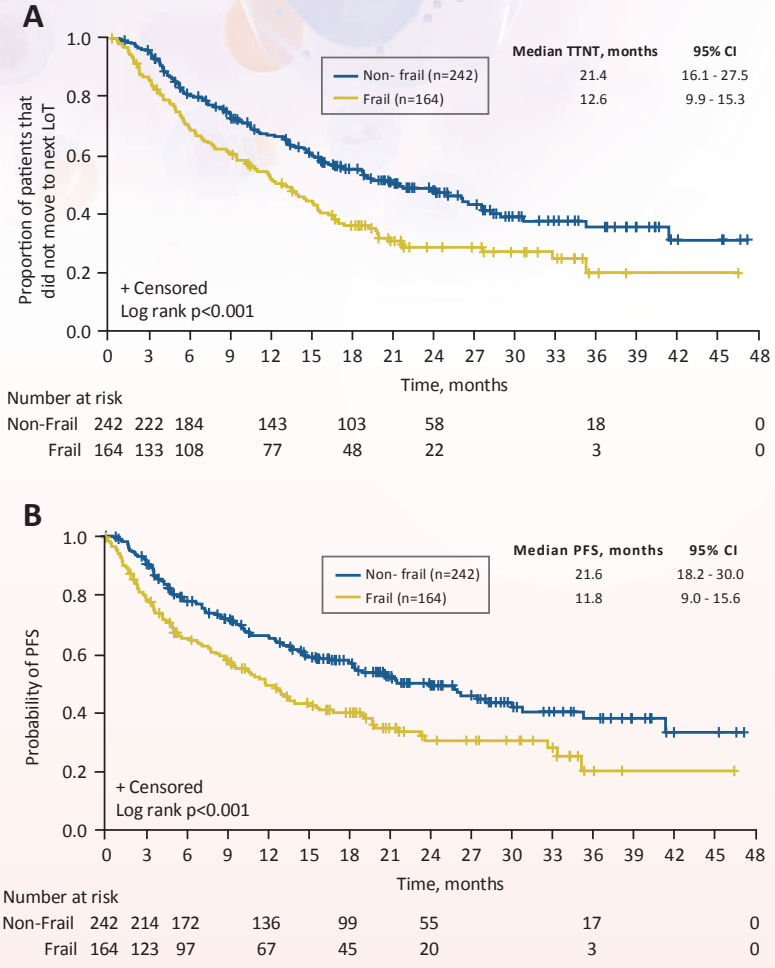

*Figure 2. Kaplan–Meier analyses. **(A)** TTNT, and **(B)** PFS, by frailty status[17,18]. CI, confidence interval; LoT, line of therapy; PFS, progression-free survival; TTNT, time-to-next treatment.*

References

1. Parekh DS, et al. Cancers. 2024;16:2931. **2.** Chen Q, et al. *Ann Hematol*. 2024;103:1833-1841. **3.** Bora K. Cancer Epidemiol. 2019;59:215-220. **4.** Bhatt P, et al. Current Oncology. 2023;30(2):2322-2347. **5.** Paul B, *et al*. ASCO Education Book. Published online 2019. https://doi.org/10.1200/EDBK_238527. **6.** Cook G, *et al. Lancet Haematol*. Published online November 2024;11:e816–29. **7.** Raje N, *et al. Blood Cancer J*. 2023;13(1):41. 8. Ahmed A, *et al*. Relapsed and Refractory Multiple Myeloma. StatPearls. **9.** Richardson PG, et al. *Journal of Clinical Oncology*. 2021;39(22):2430-2442. **10.** Gupta N, *et al. Clin Pharmacokinet*. 2019;58(4):431-449. **11.** Salomon-Perzyński A, *et al. Diagnostics*. 2021;11(9). **12.** Lee JH, *et al. Blood Res*. 2020;55(S1):43-53. **13.** Sonneveld P, *et al. Haematologica*. 2016;101(4):396-406. **14.** Daniely D, *et al. Exp Hematol*. 2022;111:79-86. **15.** Moreau P, *et al. New England Journal of Medicine*. 2016;374(17):1621-1634. **16.** Ito S. Cancers. 2020;12:265. **17.** Leleu X, *et al. Future Oncology*. 2024;20(14):935-950. **18.** Leleu X, *et al. 63rd Annual Meeting of the American Society of Hematology (ASH)*. 2021;(Poster 2701).

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by Migee Tang

On-the-Pulse

Dermatology

Hope on the Horizon for Chronic Hand Eczema (CHE)[1-6]

CHE is a painful, inflammatory skin condition affecting up to 1 in 10 adults globally[1]. It significantly impacts quality of life by interfering with daily activities and causing psychological distress[2-4]. Delgocitinib, a steroid-free topical pan-Janus kinase (JAK) inhibitor, has demonstrated strong efficacy in two pivotal Phase 3 trials (DELTA 1 and 2) with significant skin clearance improvement and pain and itch relief compared to placebo[5]. Together with its favorable safety profile, these results have led to its FDA approval for adults with moderate-to-severe CHE. In parallel, the DELTA China Phase 3 trial aims to assess its efficacy in local populations, with findings expected to be published soon. As no approved treatments currently exist for moderate-to-severe CHE in China, this represents a significant and hopeful advancement for patients[6].

Gerontology

Are Mushrooms the Key to A Longer Life[7]?

Psilocybin, a psychedelic compound found in mushrooms, is already known for its potential in treatment-resistant depression. In a more recent study, scientists found that psilocin, the active metabolite of psilocybin, prolonged the lifespan of human skin and lung cells by over 50%. In aged mice, psilocybin treatment also increased survival by 30% over a 10-month period and improved physical signs of aging, including healthier fur, reduced greying, and hair regrowth. The compound appears to reduce oxidative stress, support DNA repair, and preserve telomere length—key markers linked to aging and age-related disease. Notably, these benefits were seen even when treatment began later in life. Together, the findings position psilocybin as a promising geroprotective agent with systemic benefits that extend beyond the brain, potentially offering new paths toward therapies that not only extend life but also promote healthier aging.

Cardiology

Tricaprin and Regression of Treatment-Resistant Coronary Atherosclerosis[8]

In a groundbreaking study from Osaka University, researchers report that tricaparin, a common dietary supplement, has led to remarkable clinical improvements in two patients with triglyceride deposit cardiomyovasculopathy (TGCV), a rare form of coronary artery disease characterized by intracellular triglyceride build up. Both patients experienced significant relief from refractory angina and marked regression of diffuse coronary atherosclerosis on imaging without changes in blood cholesterol levels. These findings suggest a novel treatment approach via intracellular lipolysis rather than conventional serum lipid modulation, highlighting tricaprin's potential for TGCV and offering hope for patients who do not respond to existing therapies.

Hope of life beyond CD30+ lymphoma[1*]

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Abbreviated Prescribing Information (EU-DEC20-HK-MAR21)
ADCETRIS 50 mg powder for concentrate for solution for infusion.
Active Ingredient: Brentuximab vedotin Indication: Treatment for adult patients with previously untreated CD30+ Stage IV Hodgkin lymphoma (HL) in combination with doxorubicin, vinblastine and dacarbazine (AVD); Treatment of adult patients with CD30+ HL at increased risk of relapse or progression following ASCT; Treatment for relapsed or refractory CD30+ Hodgkin lymphoma (HL) following autologous stem cell transplant (ASCT) or at least 2 prior therapies when ASCT or multi-agent chemotherapy is not a treatment option; In combination with cyclophosphamide, doxorubicin and prednisone (CHP) for the treatment of adult patients with previously untreated systemic anaplastic large cell lymphoma (sALCL); relapsed or refractory sALCL; Treatment of adult patients with CD30+ cutaneous T-cell lymphoma (CTCL) after at least 1 prior systemic therapy. Dose & Administration: Previously untreated HL: In combination with chemotherapy (doxorubicin [A], vinblastine [V] and dacarbazine [D] [AVD]), 1.2mg/kg IV infusion over 30 min on days 1 and 15 of each 28-day cycle for 6 cycles. HL at increased risk of relapse or progression following ASCT & CTCL after at least 1 prior systemic therapy: 1.8 mg/kg IV infusion over 30 min every 3 wk up to max of 16 cycles. Previously untreated sALCL: In combination with chemotherapy (cyclophosphamide [C], doxorubicin [H] and prednisone [P] [CHP]), 1.8 mg/kg IV infusion over 30 minutes every 3 weeks for 6 to 8 cycles. Relapsed or refractory HL & relapsed or refractory sALCL: 1.8 mg/kg IV infusion over 30 min every 3 wk, patients who achieve stable disease or better should receive a minimum of 8 cycles and up to a max of 16 cycles. Contraindications: Hypersensitivity to brentuximab. Combined use of brentuximab & bleomycin. Pregnancy & lactation. Special Population: Closely monitor for new or worsening neurological, cognitive or behavioural signs or symptoms suggestive of progressive multifocal leukoencephalopathy (PML); new or worsening abdominal pain suggestive of acute pancreatitis; new or worsening pulmonary symptoms; emergence of serious & opportunistic infections; immediate & delayed infusion-related reactions. Discontinue use if anaphylaxis & Stevens-Johnson syndrome occurs. Patient w/rapidly proliferating tumour & high tumour burden at risk of tumour lysis syndrome. Monitor for symptoms of neuropathy. Patient experiencing new or worsening peripheral neuropathy may require delay & dose reduction or discontinuation of treatment. Monitor CBC prior to therapy; serum glucose. Patient w/ an elevated BMI w/ or w/o history of DM; renal & hepatic impairment; on controlled Na-diet. Women of childbearing potential should use 2 methods of contraception during & until 30 days after therapy. Men should not father a child during therapy & for up to 6 mth after last dose. May affect ability to drive or operate machinery. Childn & elderly. Adverse Reactions: Infection, sepsis/septic shock, upper resp tract infection, herpes zoster, pneumonia, neutropenia, anaemia, thrombocytopenia, hyperglycaemia, peripheral sensory neuropathy, peripheral motor neuropathy, dizziness, demyelinating polyneuropathy, cough, dyspnoea, diarrhoea, nausea, vomiting, constipation, elevation of ALT/AST, alopecia, pruritus, rash, myalgia, arthralgia, back pain, fatigue, pyrexia, infusion-related reactions & chills.

For detailed information, please consult full prescribing information.
For reporting suspected side effects for Takeda products at AE.HongKong@takeda.com
For asking medical information and other inquiries for Takeda products at medinfohk@takeda.com

Reference: 1* Adcetris Package Insert, EU-DEC20-HK-MAR21

C-APROM/HK/ ADCE/0031(03/2022)

by Migee Tang

On-the-Pulse

Otorhinolaryngology

A Genetic Cure for Silence[9]

A single gene therapy injection has been shown to restore hearing in both children and adults with inherited deafness. In a groundbreaking study involving ten individuals with mutations in the OTOF gene, a gene crucial for sound signal transmission from the ear to the brain, researchers used a virus to deliver a healthy gene copy directly into the round window of the cochlea. Most regained hearing within a month, with the best outcomes seen in children aged 5 – 8 years. By six months, all patients had significant improvement— detecting sounds as soft as 52 decibels compared to 106 decibels at baseline. The treatment was safe and well-tolerated, marking a major milestone toward reversing genetic deafness and paving the way for future therapies targeting other hearing-related genes.

Sports Medicine

Heated Workouts, Stronger Results[10]

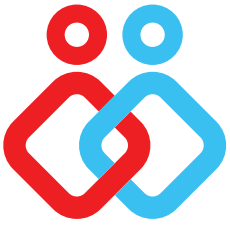
Ever feel like skipping your workout when the summer heat hits? Heated resistance exercise (HRE), the combination of heat stress with strength training, is gaining traction for its potential to enhance muscle growth and performance. Emerging research suggests that heat can amplify key processes linked to protein synthesis, such as heat shock protein expression and hormonal responses. While most existing evidence comes from cell and animal studies, human trials are showing promising results in showing that both local and whole-body heat combined with resistance exercise may boost neuromuscular function and hypertrophy. Though still in early stages, HRE shows promise as a valuable tool in athletic and rehabilitation settings. Therefore, rather than avoiding training in the heat, it may be worth considering its potential added benefits!

References

1. Quaade AS, et al. Contact Dermatitis. 2021;84:361–374. **2.** Grant L, et al. Adv Ther. 2020;37(2):692-706. **3.** Dalgard FJ, et al. J Invest Dermatol. 2015;135(4):984-991. **4.** Cortesi PA, et al. Contact Dermatitis. 2014;70(3):158-168.**5.** Bissonnette R, et al. Lancet. 2024;404:461-473. **6.** NCT06004050. ClinicalTrials.gov. Accessible from: https://clinicaltrials.gov/study/NCT06004050. **7.** Kato K, et al. NPJ Aging. 2025;11(1):55. **8.** Hirano KI, Higashi M, Nakajima K. Eur Heart J. 2023 Apr 1;44(13):1191. **9.** Qi J, et al. Nat Med. Published online July 2, 2025. doi:10.1038/s41591-025-03773-w. **10.** Pryor JL, et al. J Strength Cond Res. 2024;38(7):1350-1357.

"Fostering Innovation Through Continuous Medical Education with On the Pulse"

2025
世界病人安全日
World Patient Safety Day

醫 同 患
安  全
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Together for patient safety

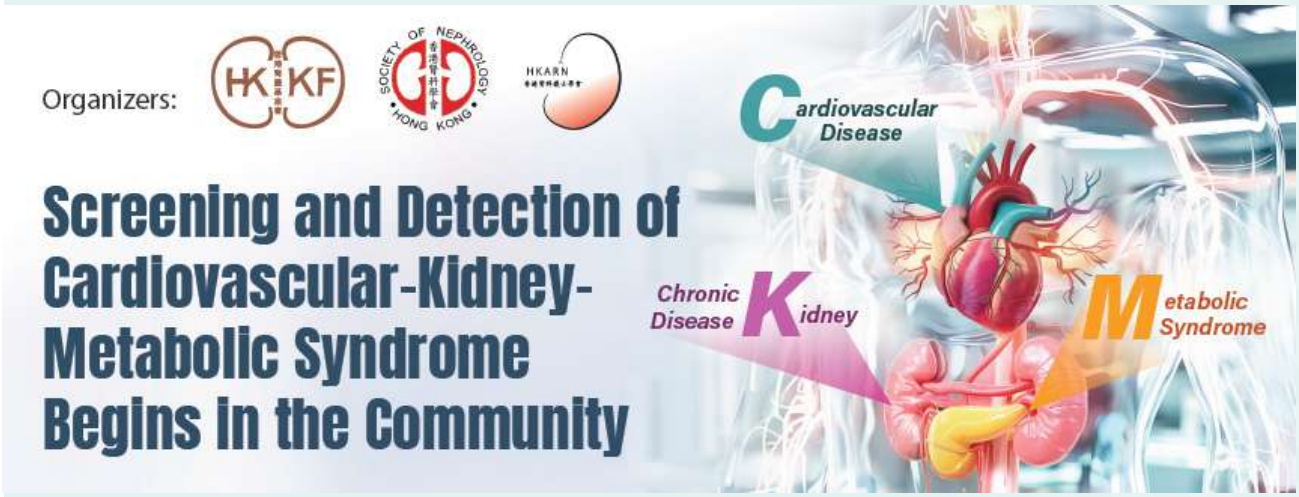
2025.9.17

推廣機構
Promoting organization:

香港腎臟基金會
Hong Kong Kidney Foundation

by Dr. Roy Lau

Lecture Series on Cardiovascular-Kidney-Metabolic Syndrome



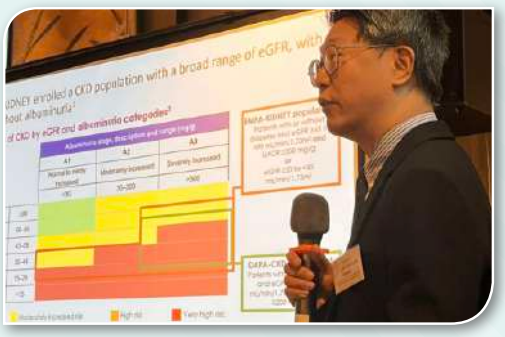
Cardiovascular-kidney-metabolic (CKM) syndrome is a novel construct emphasising the pathophysiological interconnections among cardiovascular disease (CVD), chronic kidney disease (CKD), and metabolic diseases, such as diabetes mellitus (DM) and obesity. Each of the 3 axes of disorders can lead to or worsen one another, thus screening for CKM risk factors and timely intervention are essential for preventing CKM syndrome and optimising patient outcomes.

Practically, primary care provided by general practitioners (GPs) plays a pivotal role in managing CKM syndrome. Therefore, increasing the awareness of CKM syndrome among GPs is urgently needed. In this regard, a series of 6 lectures titled "Screening and Detection of Cardiovascular-Kidney-Metabolic Syndrome Begins in the Community", jointly organised by the Hong Kong Nephrology Society (HKSN), the Hong Kong Kidney Foundation (HKKF), and the Hong Kong Association of Renal Nurses (HKARN) were recently held at 6 different locations in Hong Kong Island, Kowloon, and the New Territories, respectively. A panel of 6 local nephrologists was invited to discuss the pathophysiology of CKM and share their clinical opinions in tackling the disorder. The lectures were followed by fruitful discussion among the keynote speakers and audience.

Dr. Cheung Cheuk Yiu Ben, Keynote speaker of the Lecture in Tsuen Wan

Dr. Lau Lik Fung Sam, Keynote speaker of the Lecture in Shatin

Dr. Leung Ka Chun, Keynote speaker of the Lecture in Tuen Mun



Dr. Lam Chi Kwan Darwin, Keynote speaker of the Lecture in Kwun Tong

Dr. Wong Chi Kwan, Keynote speaker of the Lecture in Causeway Bay

Dr. Chan Koon Ming, Keynote speaker of the Lecture in Mong Kok

Keynote speaker, Dr. Lui Siu Fai (Chairman of the Hong Kong Kidney Foundation), and representatives of pharmaceutical companies

Discussion between participants and Dr. Lui Siu Fai (Chairman of the Hong Kong Kidney Foundation)

Are your kidneys healthy?

From left to right: Dr. Lui Siu Fai (Chairman of the Hong Kong Kidney Foundation), Dr. Lam Chi Kwan Darwin (Keynote speaker of the Lecture in Kwun Tong), and Dr. Wong Sze Ho Sunny (Chairman of Hong Kong Society of Nephrology)

The lecture in Causeway Bay

Oncology:

CALQUENCE®

(acalabrutinib, as maleate)

ASTRAZENECA

HK Reg. No. HK- 68724 (17 Jun, 2025)

Composition[1]:

- Each hard capsule contains 100 mg of acalabrutinib

Indication[1]:

- Calquence as monotherapy or in combination with obinutuzumab is indicated for the treatment of adult patients with previously untreated chronic lymphocytic leukemia (CLL)
- Calquence in combination with venetoclax with or without obinutuzumab is indicated for the treatment of adult patients with previously untreated chronic lymphocytic leukemia (CLL)
- Calquence as monotherapy is indicated for the treatment of adult patients with chronic lymphocytic leukemia (CLL) who have received at least one prior therapy
- Calquence in combination with bendamustine and rituximab (BR) is indicated for the treatment of adult patients with previously untreated mantle cell lymphoma (MCL) who are not eligible for autologous stem cell transplant (ASCT)
- Calquence as monotherapy is indicated for the treatment of adult patients with relapsed or refractory mantle cell lymphoma (MCL) not previously treated with a Bruton tyrosine kinase (BTK) inhibitor

Endocrinology:

GLUCOPHAGE XR®

(metformin hydrochloride)

MERCK

HK Reg. No. HK-68753 (14 Jul, 2025)

Composition[2]:

- One prolonged release tablet contains 500 mg metformin hydrochloride corresponding to 390 mg metformin base

Indication[2]:

- Reduction in the risk or delay of the onset of type 2 diabetes mellitus in adult, overweight patients with impaired glucose tolerance (IGT) and/or impaired fasting glucose (IFG), and/or increased HbA1C who are:
  - ✓ at high risk for developing overt type 2 diabetes mellitus and
  - ✓ still progressing towards type 2 diabetes mellitus despite implementation of intensive lifestyle change for 3 to 6 months
- Treatment of type 2 diabetes mellitus in adults, particularly in overweight patients, when dietary management and exercise alone does not result in adequate glycemic control. Glucophage XR may be used as monotherapy or in combination with other oral antidiabetic agents, or with insulin
- Polycystic ovary syndrome (PCOS)

Join the HKDU

Hong Kong Doctors Union

The Hong Kong Doctors Union ("HKDU") is the one and only trade union specially designed for all medical doctors in Hong Kong, with the mission to fending for the welfare and rights of doctors.

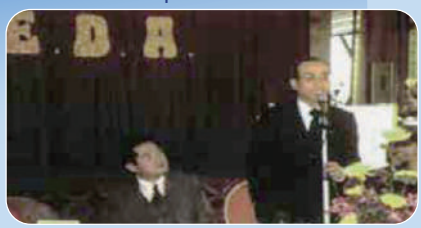
About HKDU

Founded in 1966 as the "Low-Cost Clinics Doctors Management Committee" serving as the liaison body among its members, professional organisations, and the Government. With the expansion of its scope of services and professional roles, the organisation changed its name to Hong Kong Doctors Union Ltd. (HKDU) in 2000.

In future, the HKDU will continue humbly listening and keep on improving in our role as the channel between local medical doctors and our society.

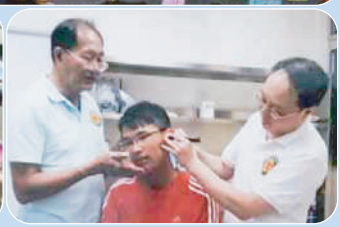
Please join us by scanning the QR code

CME seminar in the past



Sport events for members in the 1970s

Community services



The liaison body between medical doctors and government departments

Member activities

Orthopedics:

JUBBONTI®

(denosumab)

SANDOZ

HK Reg. No. HK-68756 (15 Jul, 2025)

Composition[3]:

- Each pre-filled syringe contains 60 mg of denosumab in 1 mL of solution (60 mg/mL)
- This medicinal product contains 47 mg sorbitol in each mL of solution

Indication[3]:

- Treatment of osteoporosis in postmenopausal women and in men at increased risk of fractures. In postmenopausal women denosumab significantly reduces the risk of vertebral, non-vertebral and hip fractures
- Treatment of bone loss associated with hormone ablation in men with prostate cancer at increased risk of fractures. In men with prostate cancer receiving hormone ablation, denosumab significantly reduces the risk of vertebral fractures
- Treatment of bone loss associated with long-term systemic glucocorticoid therapy in adult patients at increased risk of fracture

Hematology:

APIXABAN TEVA®

(apixaban)

TEVA

HK Reg. No. HK-68762 (16 Jul, 2025)

Composition[4]:

- Each film-coated tablet contains 2.5 mg apixaban

Indication[4]:

- Prevention of venous thromboembolic events (VTE) in adult patients who have undergone elective hip or knee replacement surgery
- Prevention of stroke and systemic embolism in adult patients with non-valvular atrial fibrillation (NVAF), with one or more risk factors, such as prior stroke or transient ischemic attack (TIA); age ≥ 75 years; hypertension; diabetes mellitus; symptomatic heart failure (New York Heart Association [NYHA] Class ≥ II)
- Treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE), and prevention of recurrent DVT and PE in adults

References

1. EMA. CALQUENCE Summary of Product Characteristics. Available from: https://www.ema.europa.eu/en/documents/product-information/calquence-epar-product-information_en.pdf. [Accessed 18 July 2025]. **2.** EMC. Glucophage SR 500 mg prolonged release tablets Healthcare Professionals (SmPC). 31 Mar 2025. Available from: https://www.medicines.org.uk/emc/product/6298/smpc. [Accessed 18 July 2025]. **3.** EMA. JUBBONTI Summary of Product Characteristics. Available from: https://www.ema.europa.eu/en/documents/product-information/jubbonti-epar-product-information_en.pdf. [Accessed 18 July 2025]. **4.** EMC. Apixaban 2.5mg Film-Coated Tablets Healthcare Professionals (SmPC). 19 March 2025. Available from: https://www.medicines.org.uk/emc/product/13686/smpc. [Accessed 18 July 2025].

RXILIENT

Is your choice of phosphate binder doing enough to minimise your patients' diet and social restrictions?

VELPHORO®
sucroferric oxyhydroxide

A LIFE MORE ORDINARY

CKD patients often restrict their dietary protein intake due to the need to limit their dietary phosphate.[1] The poorer nutritional outcomes that result, combined with a high pill burden have been shown to negatively impact quality of life.[2,3] Using a potent phosphate binder when following a renal diet can help patients control serum phosphate levels, whilst maintaining sufficient protein intake.[1] Good nutritional status has shown to improve quality of life.[2]

VELPHORO® is ***one of the most potent*** phosphate binders,[4] it has good tolerability[5,6] and is conveniently dosed at ***1 pill per meal.***[6] Recent real world evidence demonstrates that CKD patients are ***twice as likely to have their phosphate levels controlled*** after initiation of VELPHORO®.[7] This further supports the efficacy as shown in phase III clinical trials.[5,8]

Reference:
1. Kalantar-Zadeh K, *et al. Clin J Am Soc Nephrol.* 2010;5: 519–530. **2.** Amarantos E, *et al. Journals of Gerontology.* 2001;56(2):54-64. **3.** Chiu YW, *et al. Clin J Am Soc Nephrol.* 2009;4(6):1089-1096. **4.** Gutekunst L, *et al. J Ren Nutr.* 2016;26(4):209-218. **5.** Floege J, *et al. Kidney Int.* 2014;86(3):638–47. **6.** VELPHORO® SmPC. **7.** Coyne D, *et al. J Clin Nephrol.* 2017;88(2):59-87. **8.** Floege J, *et al. Nephrol Dial Transplant.* 2015;30(6):1037-1047.

SCAN HERE for Velphoro® Abbreviated Prescribing Information

For Healthcare Professionals Only

Rxilient Medical (Hong Kong) Limited
Unit 2106, 21st Floor, Island Place Tower, No.510 King's Road, North Point, Hong Kong Tel: 2369 3889 Email: enquiry_hk@Rxilient.com

VEL/HKG/DOC-095/2025/rev.01

THE WISE CHOICE

FOR YOUR CHB PATIENTS

Your patients deserve better care with Vemlidy®:*

- Higher rates of ALT normalization and high rate of viral suppression[1-3]
- Less impact on renal and bone function[1-3]
- 0% resistance detected at 5 years[1]
- No dosage adjustment for patients with eCrCl≥15mL/min or ESRD receiving chronic hemodialysis[4]

ALT: Alanine Aminotransferase CHB: Chronic Hepatitis B; eCrCl: Estimated Creatinine Clearance; ESRD: End Stage Renal Disease

*Comparison of ALT normalization, viral suppression, and impact on renal and bone function were made between tenofovir aladenamide and tenofovir disoproxil fumarate.[1-3]

Product photo shown is not actual size.
The person depicted is not an actual healthcare professional.

Reference:
1. Chan HLY, Buti M, Agarwal K, et al. Maintenance of high levels of viral suppression and improved safety profile of tenofovir alafenamide relative to tenofovir disoproxil fumarate in chronic hepatitis B patients treated for 5 years in 2 ongoing phase 3 studies. Poster presented at: AASLD; November 13-16, 2020. Vitual 803.
2. Buti M, Gane E, Seto WK, et al. Tenofovir alafenamide versus tenofovir disoproxil fumarate for the treatment of patients with HBeAg-negative chronic hepatitis B virus infection: a randomised, double-blind, phase 3, non-inferiority trial. Lancet Gastroenterol Hepatol. 2016;1:196-206.
3. Chan HL, Fung S, Seto WK, et al. Tenofovir alafenamide versus tenofovir disoproxil fumarate for the treatment of HBeAg-positive chronic hepatitis B virus infection: a randomised, double-blind, phase 3, noninferiority trial. Lancet Gastroenterol Hepatol. 2016 Nov;1(3):185-195.
4. Vemlidy Prescribing Information. (Version HK-NOV20-US-AUG20).

VEMLIDY® Abbreviated Prescribing Information (Version: HK-NOV20-US-AUG20) Presentation: Tablets: 25 mg of tenofovir alafenamide - yellow, round, film-coated tablets, debossed with "GSI" on one side of the tablet and "25" on the other side. **Indications:** VEMLIDY is indicated for the treatment of chronic hepatitis B virus (HBV) infection in adults with compensated liver disease. **Dosage:** Prior to initiation of VEMLIDY, patients should be tested for HIV-1 infection. VEMLIDY alone should not be used in patients with HIV infection. Adults: The recommended dosage is 25 mg (one tablet) taken orally once daily with food. Patients with Renal Impairment: No dosage adjustment is required in patients with estimated creatinine clearance greater than or equal to 15 mL/min, or in patients with end stage renal disease (ESRD; estimated creatinine clearance below 15 mL/min) who are receiving chronic hemodialysis. On days of hemodialysis, administer VEMLIDY after completion of hemodialysis treatment. VEMLIDY is not recommended in patients with ESRD who are not receiving chronic hemodialysis. Patients with Hepatic Impairment: No dosage adjustment is required in patients with mild hepatic impairment (Child-Pugh A). Not recommended in patients with decompensated (Child-Pugh B or C) hepatic impairment. **Contraindications:** None. **Warnings and Precautions:** Severe acute exacerbation of Hepatitis B after discontinuation of treatment: Discontinuation of VEMLIDY, may result in severe acute exacerbations of hepatitis B. Patients who discontinue VEMLIDY should be closely monitored with both clinical and laboratory follow-up for at least several months after stopping treatment. If appropriate, resumption of anti-hepatitis B therapy may be warranted. Risk of development of HIV-1 resistance in patients coinfected with HBV and HIV-1: Due to the risk of development of HIV-1 resistance, VEMLIDY alone is not recommended for the treatment of HIV-1 infection. The safety and efficacy have not been established in patients coinfected with HBV and HIV-1. HIV antibody testing should be offered to all HBV-infected patients before initiating therapy with VEMLIDY, and, if positive, an appropriate antiretroviral combination regimen that is recommended for patients coinfected with HIV-1 should be used. New onset or worsening renal Impairment: Prior to or when initiating VEMLIDY, and during treatment with VEMLIDY on a clinically appropriate schedule, assess serum creatinine, estimated creatinine clearance, urine glucose, and urine protein in all patients. In patients with chronic kidney disease, also assess serum phosphorus. Discontinue VEMLIDY in patients who develop clinically significant decreases in renal function or evidence of Fanconi syndrome. Lactic acidosis/severe hepatomegaly with steatosis: Treatment with VEMLIDY should be suspended in any patient who develops clinical or laboratory findings suggestive of lactic acidosis or pronounced hepatotoxicity (which may include hepatomegaly and steatosis even in the absence of marked transaminase elevations). **Adverse reactions:** Refer to warning and precautions for severe acute exacerbation of hepatitis B, new onset or worsening of renal impairment, and lactic acidosis/severe hepatomegaly with steatosis. Headache, abdominal pain, cough, back pain, fatigue, nausea, arthralgia, diarrhea and dyspepsia were reported in ≥ 5% of subjects in clinical studies. **Drug interactions:** Anticonvulsants: carbamazepine, oxcarbazepine, phenobarbital, phenytoin. Antimycobacterial: rifabutin, rifampin, rifapentine. Herbal Products: St. John's wort. Drugs that reduce renal function or compete for active tubular secretion such as acyclovir, cidofovir, ganciclovir, valacyclovir, valganciclovir, aminoglycosides (e.g., gentamicin), and high-dose or multiple NSAIDs. **Before prescribing, please consult full prescribing information which is available upon request.** VEMLIDY is a registered trademark of Gilead Sciences, Inc., or its related companies.

HK-VEM-0049_V.1 2/2/2023

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