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Nephrology

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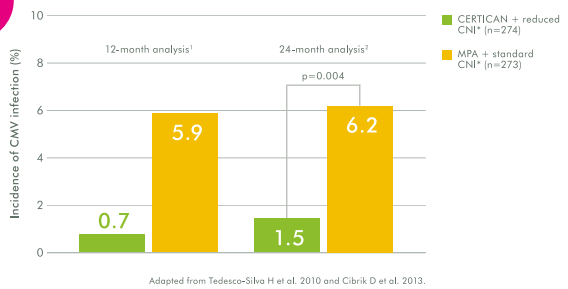

Adapted from Tedesco-Silva H et al. 2010 and Cibrik D et al. 2013.

SIGNIFICANT REDUCTION IN THE INCIDENCE OF VIRAL INFECTION

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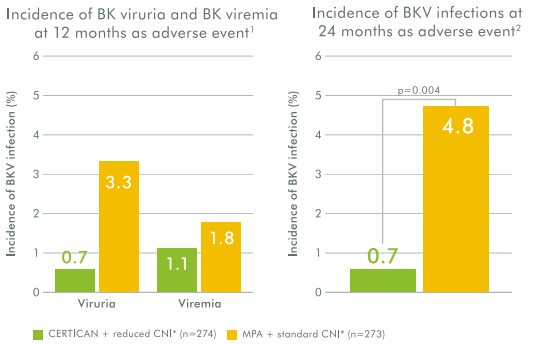

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Caution with inducers of CYP3A4 (e.g St. John's Wort, anticonvulsants, (e.g carbamazepine), phenobarbital, phenytoin, anti-HIV drugs (e.g efavirenz, nevirapine), erythromycin, verapamil, inhibitors of PgP, and moderate inhibitors of CYP3A4 (e.g. antifungal substances: fluconazole, calcium channel blockers: nicardipin, diltiazem, protease inhibitors: nelfinavir, indinavir, amprenavir, actreatide and midazolam. Avoid grapefruit juice, grapefruit. Avoid use of live vaccines. Adverse reactions: Very common (>10%) Infections (viral, bacterial, fungal), lower respiratory tract infection, upper respiratory tract infection, urinary tract infections, anemia/erythropenia, leucopenia, thrombocytopenia, hyperlipidemia (cholesterol and triglycerides), new onset diabetes mellitus, hypokalemia, insomnia, anxiety, headache, venous thromboembolic events, hypertension, cough, dyspnea, diarrhea, nausea, vomiting, abdominal pain, pericardial and pleural effusion, peripheral edema, healing impairment, pain and pyrexia. Common (1 to 10%) Malignant and unspecified tumors, skin neoplasms, wound infection, sepsis, pancytopenia, thrombotic thrombocytopenic purpura/hemolytic uremic syndrome, tachycardia, epistaxis, lymphocele, renal graft thrombosis, stomatitis/mouth ulceration, oropharyngeal pain, myalgia angioedema, acne arthralgia, pancreatitis, proteinuria, erectile dysfunction, renal tubular necrosis, incisional hernia and hepatic enzyme abnormal. Uncommon (0.1 to 1%) Lymphomas, male hypogonadism, interstitial lung disease, hepatitis (non-infectious) and jaundice. Unknown Pulmonary alveolar proteinosis, erythroderma and leukocytoclastic vasculitis.

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Disclaimer

The Cover Shot

Lotus has captured the imagination and fancy of artists and photographers alike for centuries because of its beauty and mystery throughout the year, from beautiful flowers in the height of summer to the mysterious withering bare stems in winter. This picture was taken in Wuxi in the winter month of January.

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Editorial

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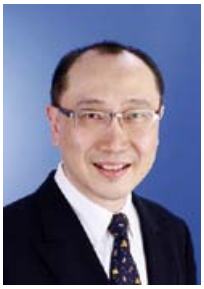
Editors



Dr Samuel Ka-shun FUNG

It is my honor to be the Editor of this March issue that coincides with the month hosting the World Kidney Day (WKD), which aims to raise awareness of the public, at-risk patients and healthcare workers in renal and non-renal fields alike on the importance of our Kidney Health in daily lives and clinical practice. This year's theme is **"Kidney Health for Everyone Everywhere"**.

The burden of Kidney Disease is not only a global but a local issue as well. Acute Kidney Injury is known to be an important driver to Chronic Kidney Disease, which subsequently progresses to end stage kidney failure and renal replacement therapies. In the recent WKD Editorial KI 2019 "Burden, access, and disparities in kidney disease", Crews et al for the WKD Steering Committee in Kidney International, raises the challenges and calls for prevention and early treatment of kidney disease, healthy lifestyle, screening, universal coverage, health policies and financing.[1]

We thank the authors for this issue articles with focus on local setting. Dr Desmond Yap highlights the advances in prevention of acute kidney injury, diabetic kidney diseases, IgA nephropathy, lupus nephritis and adult polycystic kidney disease in the Challenge and Advances in the Prevention and Management of Chronic Kidney disease. The management with good primary and secondary care together is important in preventing kidney disease progression.

Dr Terence Yip and Dr SL Lui have written on the Update of Peritoneal Dialysis (PD) in Hong Kong and Dr Hon-lok Tang on Update on Haemodialysis (HD) Therapies. Around 70% of the dialysis population is treated with PD and the remaining is on HD as from the Hong Kong Renal Registry Data. PD has been successful and has made a significant mark in the world[2]. Newer PD fluid using glucose sparing icodextrin and biocompatible solutions and automated PD machines have been introduced and implemented progressively. There are much advances in haemodialysis in terms of various modalities in apparatus, high flux, haemodiafiltration, high cut-off, medium cut-off and nocturnal home haemodialysis (NHHD). PD and NHHD are the backbone of the Home Therapies offered where dialysis are carried out in the home environment.

Dr Kai-ming Chow's article on Renal Transplant looks into the benefits of transplant for different patient groups on CKD in line with the theme of Kidney Health for Everyone Everywhere. Rightly, however, one of the concluding remarks is the hurdle of organ donor shortage. This remains to be a challenge calling for an increase in Organ Donation rate in Hong Kong.

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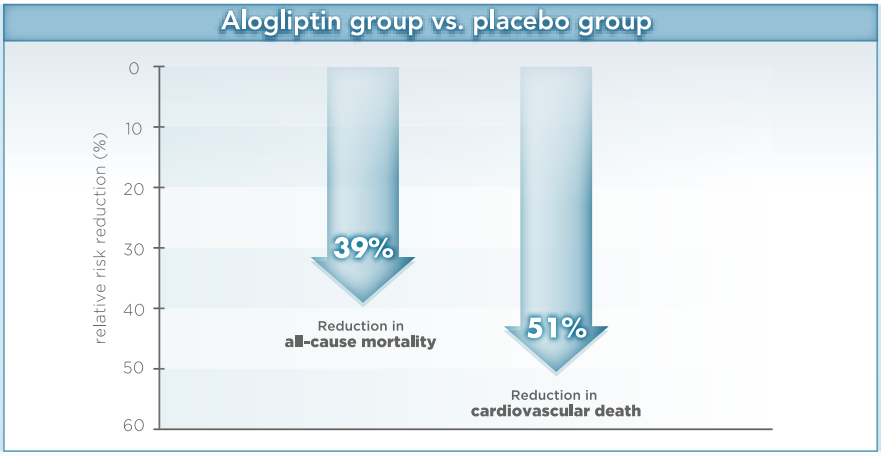

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*SU : sulfonylurea †ACS: acute coronary syndrome

^ EXAMINE Trial: EXamination of CArdiovascular OutcoMes with AlogliptIN versus standard-of-care in Patients with Type 2 Diabetes Mellitus and Acute Coronary Syndrome - Multi-centre, randomized, double-blind study including 5,380 patients. Patients randomly assigned to receive alogliptin (n=2,679) or placebo (n=2,701) , in addition to standard-of-care treatment for type 2 diabetes. Median follow-up period was 18 months

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EVERY PIECE COUNTS

Challenges and Advances in the Prevention and Management of Chronic Kidney Disease

Dr Desmond Yat-Hin YAP

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Dr Desmond Yat-Hin YAP

This article has been selected by the Editorial Board of the Hong Kong Medical Diary for participants in the CME programme of the Medical Council of Hong Kong (MCHK) to complete the following self-assessment questions in order to be awarded 1 CME credit under the programme upon returning the completed answer sheet to the Federation Secretariat on or before 31 March 2019.

INTRODUCTION

Chronic Kidney Disease (CKD) is an escalating local-regional and global health concern. The rising incidence and prevalence of CKD is related to an ageing population in many localities, and also to the increased comorbid medical conditions such as diabetes mellitus and hypertension in older patients[1,2]. The presence of CKD carries several important implications for patient care. Firstly, CKD is associated with heightened patient morbidity and mortality, resulting in rising treatment costs and demand for healthcare utilisation such as dialysis services. Secondly, patients with pre-existing CKD are predisposed to acute-on-chronic renal failure and require careful selection and dosage adjustment of medications when being treated for other medical conditions.

CKD is often a result of repeated or inappropriately-managed acute kidney injury (AKI), or due to indolent insult from chronic medical conditions such as diabetes, hypertension or chronic glomerulonephritis. These conditions will lead to destruction of kidney parenchymal tissue followed by progressive deterioration of renal function. While substantial advancements in understanding the pathophysiology and management of AKI and CKD have been witnessed over the past few decades, the prognosis and clinical outcomes of CKD patients remain suboptimal once significant chronic parenchymal changes such as glomerulosclerosis, interstitial inflammation and fibrosis and tubular atrophy have set in. The following discussion outlines the challenges and advances in the prevention and management of CKD.

PREVENTION OF ACUTE KIDNEY INJURY

Acute kidney injury (AKI), if left unnoticed or improperly managed, will result in irreversible renal damage and hence CKD. Therefore, timely prevention and optimal management of AKI is a key step to avoid the development of CKD. Elderly people are especially prone to AKI because of reduced renal reserve and the presence of predisposing medical conditions such as diabetes mellitus, hypertension or pre-existing renal impairment. The causes of AKI are in general easily identifiable and reversible. Common causes of AKI include renal hypoperfusion, obstructive causes and exposure to nephrotoxic agents. Renal hypoperfusion is often related to gastrointestinal bleeding, dehydration and severe sepsis. AKI due to these causes can be readily rectified by volume repletion and treating the underlying conditions. Acute or chronic urinary retention related to benign prostatic hyperplasia can often cause bilateral hydronephrosis with acute and/or chronic renal failure in elderly men. Prompt urological intervention can help preventing irreversible renal damage and halt progression to CKD. Exposure to nephrotoxic agents is a very frequent cause of AKI, especially in the older population as a result of their decreased kidney reserve and polypharmacy. Common nephrotoxic drugs include non-steroidal anti-inflammatory drugs (NSAIDS), antiviral agents (e.g. acyclovir, tenofovir) and nephrotoxic antibiotics (e.g. aminoglycosides and vancomycin). One should avoid these agents in patients with pre-existing renal impairment, and carefully review the indications and dosages before administering these drugs. History of using over-the-counter drugs or herbal medicinal products should be meticulously elicited in patients presenting with AKI. Administration of iodine contrast is also not an uncommon cause of AKI. Clinicians should carefully review the indications for contrast studies and ensure adequate hydration to minimise the risk of contrast nephropathy. Drugs which can precipitate contrast nephropathy (e.g. metformin) should also be withheld before the procedure. The use of acetylcysteine or sodium bicarbonate infusion to prevent contrast nephropathy remains controversial, but due to their good safety profile these agents can be considered adjunctive measures. Acute glomerulonephritis should be suspected in patients with active urinary sediments, red cell casts, significant proteinuria or other autoimmune phenomena (e.g. vasculitic rashes, arthralgia, pulmonary hemorrhage, etc.). Multiple myeloma should be considered especially in the elderly with unexplained AKI or nephrotic syndrome, and with other suggestive features such as anemia and back pain.

DIABETIC KIDNEY DISEASE

Diabetic kidney disease (DKD), being the commonest cause of CKD and end stage renal disease (ESRD) in many localities, represents an important and growing health problem[1,2]. In Hong Kong, approximately half of the incident ESRD cases are due to DKD[2]. The growing volume of patients, lack of effective treatment for established DKD and the poor understanding of

its pathophysiology all present significant challenges in the care of DKD patients. The current standard management of DKD largely depends on optimal diabetic and blood pressure control. The significance of good glycemic control has been supported by various large international multi-centre randomised controlled trials (RCT)[3]. In this context, a target HbA1c level <7.0% is preferable, while balancing the risk of hypoglycemia. Optimal blood pressure control is associated with overall reduction in diabetic complications and mortality. Renin-angiotensin blocking agents [angiotensin converting enzyme inhibitor (ACEI) or angiotensin receptor blocker (ARB)] is the treatment of choice in DKD, and its use is associated with decreased risk of micro- and macro- albuminuria and progression to ESRD[3]. Dual blockade with ACEI and ARB have fallen out of favor in recent years because such approach will aggravate renal function decline. Recent data suggested that the choice of anti-diabetic agents might have differential effects on renal function protection. In this context, variable outcomes have been reported on the effect of peroxisome proliferator activator receptor-gamma (PPAR-ϒ) agonist on DKD. One meta-analysis which pooled data from 15 clinical trials showed that the use of PPAR-ϒ agonist might favor albuminuria reduction in diabetic patients[4]. However, the risk of cardiovascular events remains a concern in using PPAR-ϒ agonist although the use of pioglitazone did not appear to confer excessive cardiovascular complications. Data to date suggested that dipeptidyl peptidase-4 (DDP-4) inhibitors have neutral effects on renal outcomes in DKD patients, and the results from several multi-centre RCTs are awaited to ascertain their impact on cardiovascular and renal outcomes in diabetic patients. Results from two landmark RCTs (EMPA-REG and CANVAS) have demonstrated the benefits of sodium glucose cotransporter 2 inhibitors (SGLT2-i) on important renal outcomes including worsening of nephropathy, doubling of serum creatinine level and initiation of dialysis in patients with Type 2 diabetes[5,6]. Current recommendations suggest SGLT2-i to be used in patients with eGFR >60 ml/min but emerging data shows that the use of SGLT2-inhibitor is effective and safe in patients with lower eGFR. Studies are underway to investigate novel therapeutic options such as pirfenidone and selective endothelin receptor antagonists.

IgA NEPHROPATHY

IgA nephropathy (IgAN) is the commonest primary glomerulonephritis and is a significant contributor of CKD and ESRD in Hong Kong[2]. The clinical presentation of IgAN is protean, ranging from incidental finding of renal impairment or hypertension, micro-/macroscopic hematuria, and in rare instances rapidly progressive glomerulonephritis. Many IgAN patients are clinically asymptomatic, resulting in poor awareness of disease, delay in seeking medical attention and treatment non-compliance. Furthermore, there is lack of effective treatment for IgAN. Current data suggest that the most effective strategy for IgAN remains to be adequate renin-angiotensin blockade and good blood pressure control[7,8]. Immunosuppressive treatments only confer benefits in selected IgAN patients, for instance those with significant proliferative changes/crescents on kidney biopsy or persistent significant proteinuria[9]. In fact, results from the STOP-IgAN and TESTING trials showed that immunosuppressive treatments did not retard progression of IgAN but was associated with excessive treatment-related toxicity[10,11]. Various attempts have been tried to tackle IgAN using other immunological approach. One recent phase 2b RCT (NEFECON) revealed encouraging data of gut-released budesonide in IgAN patients[12], and phase 3 clinical trials are underway to further investigate its role in IgAN. Other novel therapeutic options include spleen tyrosine kinase (Syk) inhibitors and biological therapies targeting at B lymphocytes/plasma cells and the complement cascade[7].

LUPUS NEPHRITIS

Lupus nephritis (LN) is an important cause of CKD and ESRD, especially among young females in Asia and Hong Kong[2]. The presence of renal involvement in patients with systemic lupus erythematosus (SLE) is associated with excessive risk of renal failure and mortality[13]. CKD in LN patients is often due to delayed or poorly managed acute nephritic episodes, or repeated renal flares causing attrition of kidney parenchyma. Therefore, the prevention of CKD in LN relies on both effective induction treatments to limit renal injury and adequate maintenance immunosuppression to prevent disease relapse. MMF is gaining popularity as first-line induction agent for active LN owing to its high efficacy in Chinese patients, better preservation of fertility in young females as well as its favorable drug tolerability and long-term treatment outcomes[14,15]. Prevention and prediction of renal flares remain highly challenging in the care of LN patients. Conventional serological markers such as anti-dsDNA or C3 only show modest performance in predicting renal relapse; novel biomarkers for monitoring disease activity and prognostication is still an unmet need. The appropriate use of maintenance immunosuppression is of fundamental importance to sustain disease remission in LN patients. Accumulating data suggest that MMF maintenance might be superior to azathioprine in preventing relapse and is associated with good long-term safety[15-17]. Other important measures include the use of anti-malarials to reduce flare risk and renin-angiotensin blockade for renoprotection. While biological therapies did not improve the renal outcomes in active LN, these agents might have roles in disease stabilisation and corticosteroids minimisation. The impact of other emerging therapies such as calcineurin inhibitors or mTOR inhibitors on long-term renal outcomes of LN patients remains to be tested. The short- and long-term treatment efficacy, history of prior therapies and disease relapse, drug tolerability, pregnancy and economic concerns are all important considerations when choosing appropriate induction and maintenance treatments in LN patients.

ADULT POLYCYSTIC KIDNEY DISEASE

Adult polycystic kidney disease (APKD) is one of the commonest inherited kidney diseases and is also an important cause of CKD and ESRD. Optimal blood pressure control is integral to the management of APKD. Data from large clinical trials support the recommendation of lower blood pressure target (95/60 to 110/75 mmHg) in APKD patients[18]. Various treatments have been attempted to retard disease progression

in APKD patients. While early studies showed that mammalian target of rapamycin (mTOR) inhibitors may be beneficial in APKD, subsequent RCTs did not confirm the initial observations. The use of tolvaptan (vasopressin 2 receptor antagonist) offers new hope to APKD patients. Recent RCT data showed that tolvaptan could halt the progression of APKD[19]. Common side effects of tolvaptan include polyuria, thirst sensation and elevation of liver parenchymal enzymes. Early experience suggested that Asian APKD patients often tolerate lower doses of tolvaptan compared with Caucasians. Other key concerns in using tolvaptan in APKD include the high costs and availability of treatment, and also the difficulty in monitoring the cyst growth and kidney sizes.

CONCLUSION

The care of CKD patients remains a challenging clinical issue. In this context, prevention and proper management of AKI is an essential means to prevent CKD. The advances in the management of some important renal diseases have also translated into improved patient outcomes in CKD. Notwithstanding, hurdles in managing CKD patients include our insufficient understanding of the pathophysiology of renal diseases, lack of effective treatment to reverse or attenuate ongoing fibrosis and atrophic changes, as well as the costs and tolerability of novel therapeutic options.

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Dermatology Quiz

Dermatology Quiz

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Specialist in Dermatology and Venereology

Dr Chi-keung KWAN

Fig.1: A straight black line on the nail

A 35-year-old woman with good past health complained of discoloration of the left index finger nail. She did not remember the time of onset clearly. It seemed to have started several years ago and she noted an increase in colour. Physical examination revealed a linear black pigmented band along the nail plate of her left index finger. It was asymptomatic (Fig 1).

Questions

1. What is the diagnosis?
2. What is the underlying pathology?
3. What do you need to observe?
4. How do you manage this lady?

(See P.36 for answers)

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CHRONIC LUNG DISEASE

7.7 folds[1]

\# Compared with healthy individuals aged 65 or above

* Conjugate vaccine induces immune memory and provides long-term protection[3,4]

† Chronic cardiovascular disease

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Unvaccinated children aged 12-23 months: 2 doses. Unvaccinated children aged 24 months to 17 years: One single dose. Adults: One single dose. For more dosage information, please refer to the full package insert. **5. CONTRAINDICATIONS:** Hypersensitivity to the active substances or to any of the excipients, or to diphtheria toxoid. Allergic reaction or anaphylactic reaction following prior administration of Prevenar (7-valent). **6. 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Prophylactic antipyretic medication is recommended for children with seizure disorders or with a prior history of febrile seizures and for all children receiving Prevenar 13 simultaneously with vaccines containing whole cell pertussis. **7. INTERACTIONS:** Infants and children aged 6 weeks to 5 years: Can be given with any of the following vaccine antigens, either as monovalent or combination vaccines: diphtheria, tetanus, acellular or whole cell pertussis, Haemophilus influenzae type b, inactivated poliomyelitis, hepatitis B, meningococcal serogroup C, measles, mumps, rubella and varicella. In clinical trials, where there was concomitant administration of Prevenar 13 and rotavirus vaccine, no change in the safety profiles of these vaccines was observed. When Prevenar 13 is administered concomitantly with Infanrix hexa (DTaP HBsAg-PV-Hib), the rates of febrile reactions are similar to those seen with concomitant administration of Prevenar (7-valent) and Infanrix hexa. Children 6 to 17 years of age and adults 18 to 49 years of age: No data are currently available regarding concomitant use with other vaccines. Adults aged 50 years and older: May be administered concomitantly with seasonal trivalent inactivated influenza vaccine. Different injectable vaccines should always be given at different injection sites. **8. PREGNANCY AND LACTATION:** Prevenar 13 is not indicated or recommended for use in pregnant women and has not been evaluated for potential harmful effects during pregnancy in humans. Safety during lactation has not been established. **9. SIDE EFFECTS:** Children: Decreased appetite; fever; irritability; drowsiness/increased sleep; restless sleep/decreased sleep; any vaccination-site erythema, induration/swelling or pain/tenderness; vaccination-site pain/tenderness interfering with movement; diarrhoea, vomiting; rash. Children and adolescents aged 5 to 17 years of age: Decreased appetite; irritability; any vaccination-site erythema; induration/swelling or pain/tenderness; drowsiness/increased sleep; restless sleep/decreased sleep; vaccination-site tenderness (including impaired movement); fever; headache; rash; urticaria/urticaria-like rash; vomiting; diarrhoea. Adults: decreased appetite; headache; diarrhoea; vomiting; rash; chills; fatigue; vaccination-site erythema; vaccination-site induration/swelling; vaccination-site pain/tenderness; limitation of arm movement; joint pain; muscle pain; fever. (Please refer to the full Prescribing Information for details). **Reference:** HK Pneumococcal polysaccharide conjugate vaccine, 13-valent adsorbed (version December 2015). **Date of preparation:** APR 2017 **Identifier number:** PR13-0417_Hong Kong **FULL PRESCRIBING INFORMATION IS AVAILABLE UPON REQUEST.**

PP-PRE-HKG-0006

MCHK CME Programme Self-assessment Questions

Please read the article entitled "Challenges and Advances in the Prevention and Management of Chronic Kidney Disease" by Dr Desmond Yat-Hin YAP and complete the following self-assessment questions. Participants in the MCHK CME Programme will be awarded CME credit under the Programme for returning completed answer sheets via fax (2865 0345) or by mail to the Federation Secretariat on or before 31 March 2019 Answers to questions will be provided in the next issue of The Hong Kong Medical Diary.

Questions 1-10: Please answer T (true) or F (false)

1. **Good hydration can help prevent contrast nephropathy in at-risk patients.**
2. **Acute glomerulonephritis should be suspected in patients presenting with acute kidney injury, microscopic hematuria and proteinuria on routine urine microscopy.**
3. **Diabetic nephropathy accounts for approximately 20% of incident end stage renal failure cases in Hong Kong.**
4. **Data from large multi-centre clinical trials suggest that SGLT-2 inhibitors can confer reno-protective effects in Type 2 diabetic patients.**
5. **IgA nephropathy is an uncommon cause of primary glomerulonephritis in Hong Kong.**
6. **The use of immunosuppressive treatments is generally effective in all IgA nephropathy patients.**
7. **The presence of renal involvement in patients with systemic lupus erythematosus has little impact on patient and renal outcomes.**
8. **Mycophenolate induction and maintenance is associated with favorable short- and long-term outcomes in Chinese lupus nephritis patients.**
9. **Current data suggest that biologics, when used as add-on therapies to standard treatments, can significantly improve renal outcomes of active lupus nephritis patients.**
10. **Data from large clinical trials suggest that the use of vasopressin-2 antagonists can provide renal benefits in patients with adult polycystic kidney disease.**

ANSWER SHEET FOR MARCH 2019

Please return the completed answer sheet to the Federation Secretariat on or before 31 March 2019 for documentation. 1 CME point will be awarded for answering the MCHK CME programme (for non-specialists) self-assessment questions.

Challenges and Advances in the Prevention and Management of Chronic Kidney Disease

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1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 ☐

Name (block letters):_____ HKMA No.: _____ CDSHK No.: _____

HKID No.: __ __ - __ __ __ __ X X (X) HKDU No.: _____ HKAM No.: _____

Contact Tel No.:_____ MCHK No.: _____ (for reference only)

Answers to February 2019 Issue

Antibiotic Treatment in Acute Diarrhoea: A Practical Approach

1. F 2. F 3. T 4. F 5. T 6. F 7. F 8. F 9. T 10. F

Balance -
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1. Fischbach M et al, Perit Dial Int 2011;31(4):450-8.

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Update on Peritoneal Dialysis in Hong Kong

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INTRODUCTION

Hong Kong, like many parts of the world, has seen a significant increase in prevalent cases of renal replacement therapy (RRT) for the past decade. According to the Hong Kong Renal registry annual reports, the prevalence rate of end stage renal disease (ESRD) increased from 965 per million population in 2005 to 1192 per million population in 2012. The latest figure in 2017 was 1337 per million population while the incidence of ESRD was 174 per million population. The total number of patients receiving RRT increased from 3312 in 1996 to 8510 in 2013. In 2017, 4439 patients were on peritoneal dialysis (PD) while 1862 were receiving haemodialysis (HD) treatment. 70% of the dialysis population was treated with PD. Diabetes mellitus has become the leading cause of ESRD in many parts of the world including Hong Kong. In 2017, among the 1302 new patients on RRT, 53% of them suffered from diabetic nephropathy. In Hong Kong, the Hospital Authority (HA) provides RRT and care for over 90% of ESRD patients.

PERITONEAL DIALYSIS-FIRST POLICY

The first acute HD treatment was delivered in Hong Kong in 1962. This was followed by chronic maintenance HD. The first cadaveric kidney transplant was performed in 1969 and the first living-related renal transplant in 1980. In the year 1980, continuous ambulatory peritoneal dialysis (CAPD) was introduced. The growing demand for dialysis treatment required the use of a cost-effective dialysis modality. In Hong Kong, the average annual cost of HD per patient is more than double that of PD. On the basis of cost-effectiveness, the Central Renal Committee promoted PD as the first-line dialysis modality for all ESRD patients requiring dialysis since 1985. This marked the beginning of the PD-first policy in Hong Kong. Under this policy, all patients requiring dialysis therapy are treated with PD first unless medical contraindications exist. Patients can choose to have HD first according to their personal preference, but they will have to bear the costs[1]. Hong Kong is the first place in the world that adopts PD-first policy. Among all Asian countries with a registry, Hong Kong is the only place having more patients on PD than HD. The PD-first policy has been implemented in Hong Kong for more than 30 years and has achieved successful outcomes throughout the years.

ADVANTAGES OF PERITONEAL DIALYSIS

PD offers certain clear advantages over HD, such as simplicity, lower operational cost, lesser need for trained technicians and nurses, minimal technical support requirements, greater capacity to expand service, no electricity dependence and home-based therapy with institutional independence. From patients' point of view, they often favour PD owing to the flexibility of schedule, the ability to perform dialysis at home, and the feasibility to receive PD exchange by an automated PD cycler while sleeping. Many studies have shown a significant association between survival advantage and receiving PD in the initial period of dialysis therapy. This early survival advantage is independent of age or comorbidities such as diabetes or cardiovascular disease[2-4]. The early survival benefit of PD may be related to the better preservation of residual renal function (RRF) compared with HD. The postulated mechanisms for superior performance of PD in preserving RRF include greater haemodynamic stability, less ischaemic kidney insult and lack of inflammatory mediators generated by the extracorporeal HD circuit. Accumulating evidence showed that RRF contributes significantly to the overall health of and survival benefit in dialysis patients[5,6]. In terms of quality of life (QoL), PD patients reported less illness intrusion, higher satisfaction, and the better ability to travel[7,8] while in-centre HD patients reported better staff and social interaction and less fear of isolation[9,10]. Overall, there was no statistically significant difference in QoL between PD and in-centre HD patients, although PD patients tended to have better QoL scores[11,12].

INNOVATIONS TO TACKLE CHALLENGES

PD-related Peritonitis

A number of important innovations in PD therapy occurred in the past 3 decades. The introduction of the "Y-set" catheter connection, incorporating the technology of flushing the tubing lumen before infusing dialysate into the patient after connection, twin bags, topical antimicrobials for exit site care were instrumental in reducing the incidence of PD-related peritonitis and exit site infections caused by gram-positive organisms. In Hong Kong, the overall rate of CAPD peritonitis has been improving. On the other hand, gram-negative organisms and multi-drug resistant organisms are becoming important causative agents of peritonitis.

New Peritoneal Dialysis Fluids

Long-term exposure to a high glucose concentration in conventional PD solution carries a number of direct and indirect (via glucose degradation products (GDPs)) detrimental effects on the peritoneal membrane as well as systemic metabolism. Long-term use of conventional PD fluids could lead to progressive damage of peritoneal membrane, eventually resulting in peritoneal failure. Glucose- or GDP-sparing strategies have been introduced to tackle this problem.

Glucose-sparing by Icodextrin-based Solution

Icodextrin is a glucose polymer and it acts as an alternative agent with an osmolarity almost similar to that of plasma. Icodextrin-based solutions pursue ultrafiltration in PD patients using colloid osmosis. The absorption of icodextrin by the peritoneum is very restricted as it only takes place by convection via the lymphatics. Icodextrin produces more ultrafiltration during the long dwell than conventional solutions. Published clinical trials consistently have shown that the use of icodextrin solution improved peritoneal ultrafiltration, reduced the risk of fluid overload, and was not associated with an increased risk of adverse events[13]. In addition, the use of icodextrin may improve glycemic control and lipid profiles in diabetic PD patients[14,15], improve left ventricular geometry[16,17], and enhance phosphate removal[18].

GDP-sparing Biocompatible Solution

During the manufacturing of glucose-containing PD solution, GDPs are the inevitable by-products of the heat sterilisation process. An ambient acidic pH will reduce the formation of GDPs in dialysate, and for this reason, the pH of unused peritoneal dialysate is low. Another challenge with formulating peritoneal dialysate for storage is that bicarbonate cannot be used as the buffer, because it reacts with calcium in the dialysate and forms calcium-carbonate precipitates. Therefore, lactate is used in lieu of bicarbonate and is converted into bicarbonate in vivo. The presence of GDPs, the low pH, high lactate and the absence of bicarbonate make conventional PD fluid not 'biocompatible.' These non-physiologic components in the dialysate damage the peritoneum and ultimately lead to the development of ultrafiltration failure. A bag of biocompatible PD fluid is divided into two sub-compartments. One compartment contains glucose and electrolytes. This sub-compartment has a very low pH, which slows the formation of GDPs. The other compartment contains bicarbonate. Because calcium is stored in the glucose-containing compartment, there is no calcium-bicarbonate interaction during storage. Before the dialysis exchange procedure, the patient breaks a frangible connection that separates the two compartments, and when the components are mixed, the final pH is close to physiologic. Neutral pH–low GDP fluids have been shown to preserve residual renal function and urine volume, particularly when used for more than 12 months[13]. This evidence, combined with the decrease in price disparity between biocompatible and conventional solutions, make more clinicians and patients move towards using neutral pH–low GDP solutions[13]. Nevertheless, further studies are required to determine whether or not neutral pH-low GDP solutions exert beneficial effects on patient outcomes such as peritonitis, technique survival and patient survival.

New Automated Peritoneal Dialysis Machines

The benefits of automated PD (APD) over CAPD include fewer connections, reduced fill volumes and exchange procedure-free during daytime. The invention and technological advancements of PD cycler in recent years further reduce barriers of performing home PD therapy. Recently, several companies have been developing cyclers that use "smart" technology. This includes cyclers with chips to record each treatment information such as treatment time, number and volume of each cycle. Some new PD cycler models now provide the feature of a digital card that can store dialysis therapy information. Dialysis unit can then download and details of the dialysis treatment process can be reviewed. This is also useful to monitor patients' compliance and adherence to treatment. The latest automated PD system is integrated with a web-based connectivity platform. It is designed with user-friendly features and secure two-way connectivity so that healthcare providers can have improved access to monitor their patients' home PD treatments and adjust PD prescriptions remotely as necessary. These cyclers may enhance adherence with proper connection procedures and very likely, make training of the patient easier[19]. Despite the benefits of APD over CAPD, the utilisation rate of APD in Hong Kong is low when compared with other places in the world. In 2017, only 17.8% PD patients in Hong Kong were on APD. The low utilisation rate is mainly due to cost concerns. In Hong Kong, APD machines are not provided by the Hospital Authority (HA). Patients need to buy or rent APD machines from suppliers or borrow machines from the Hong Kong Kidney Foundation. Existing CAPD patients who have medical indications to change their mode of PD from CAPD to APD can also apply for APD machines from the Jockey Club Charity Trust APD programme.

Haemodialysis Support

Along with the increasing number of PD patients in Hong Kong, the capacity for HD must be enhanced in order to support patients who have problems with PD. For patients who have severe peritoneal damage after peritonitis, peritoneal failure after long-term PD, inadequate dialysis despite optimising the PD regime, conversion to long-term HD will be required. In order to accommodate the growing demand for HD, the HA has collaborated with private community HD centres to provide HD service for patients under the Haemodialysis Public Private Partnership Programme. Furthermore, Hong Kong is also using the Nocturnal Home Haemodialysis Programme to step up the number of patients who can be put on HD.

CONCLUSION

This year, World Kidney Day sets out to raise awareness of the high and increasing burden of kidney diseases worldwide and the need for strategies for prevention and management of kidney diseases. Kidney Health

for Everyone Everywhere calls for universal health coverage for prevention and early treatment of kidney disease. The ultimate goal of a universal health coverage policy is to promote population health by ensuring universal, sustainable and equitable access to essential health care of high quality, protecting people from health impoverishment and improving equity in health across socioeconomic groups. The PD-first model in Hong Kong and the technological advancements in PD definitely help to achieve this ultimate goal.

ACKNOWLEDGEMENTS

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Patients continued to receive their randomly assigned medication, either dapagliflozin (2.5, 5 or 10mg) or glipizide (5, 10 or 20mg), combined with open-label metformin (1500–2500mg/day), as well as lifestyle advice. The aim is to assess the long-term efficacy and tolerability of dapagliflozin versus glipizide as add-on to metformin in patients with inadequately controlled type 2 diabetes.

BP=blood pressure. HbA_{1c}=glycated hemoglobin. SBP=systolic blood pressure.

References: 1. Henry RR, et al. Int J Clin Pract. 2012;66(5):446-56. 2. S. Del Prato, et al. Long-term glycaemic response and tolerability of dapagliflozin versus a sulphonylurea as add-on therapy to metformin in patients with type 2 diabetes: 4-year data.

Presentation: dapagliflozin propanediol monohydrate film-coated tablet. **Indication and Usage:** Improve glycaemic control in adults aged 18 years and older with type 2 diabetes mellitus, as monotherapy when diet and exercise alone do not provide adequate glycaemic control in patients for whom use of metformin is considered inappropriate due to intolerance; or in combination with other glucose-lowering medicinal products including insulin, when these, together with diet and exercise, do not provide adequate glycaemic control. **Dosage and Administration:** 5 mg or 10 mg. To be taken orally once daily at any time of day with or without food. Tablets are to be swallowed whole. **Contraindications:** Hypersensitivity to the active substance or to any of its excipients. **Warnings and Precautions:** Should not be used in type 1 diabetes mellitus; treatment of diabetic ketoacidosis; hereditary problems of galactose intolerance, the Lapp lactase deficiency, or glucose-galactose malabsorption; and while breast-feeding. Not recommended in moderate to severe renal impairment; concomitant treatment with pioglitazone or loop diuretics; volume depletion; and in elderly (≥ 75 years) when initiating dapagliflozin. Discontinue if renal function falls below CrCl < 60 ml/min or eGFR < 60 ml/min/1.73 m^2; in suspected or diagnosed diabetic ketoacidosis; and when preganancy is detected. Temporarily interrupt when volume depleted, ; treated for pyelonephritis or urosepsis; and hospitalised for major surgical procedures or acute serious medical illnesses. Caution in concomittant anti-hypertensive therapy with a history of hypotension; elderly; and already elevated haematocrit. Limited or no data in hepatic impairment; cardiac failure; pregnancy; paediatric population; and when used with DPP4 inhibitors or GLP1 analogues. **Adverse Reactions:** Very common: Hypoglycaemia when used with SU or insulin. Common: Vulvovaginitis, balanitis and related genital infections, urinary tract infection, dizziness, rash, back pain, dysuria, polyuria, dyslipidaemia, decreased creatinine renal clearance, and increased haematocrit. Uncommon: Fungal infection, volume depletion, thirst, constipation, dry mouth, nocturia, renal impairment, vulvovaginal and genital pruritus, increased blood creatinine and blood urea, and decreased weight. Rare: Diabetic ketoacidosis. **Drug interaction:** Coadministration with rifampicin may reduce dapagliflozin systemic exposure; coadministration with mefenamic acid may increase dapagliflozin systemic exposure. **Local prescribing information is available upon request. API.HK.FOR.0617**

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Update on Haemodialysis Therapies

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INTRODUCTION

The peritoneal dialysis (PD)-first policy has been adopted in Hong Kong since 1985.[1] Those end-stage renal disease (ESRD) patients with contraindications to PD, such as patients with large polycystic kidneys, history of multiple abdominal surgery and presence of colostomy, and those with inadequate dialysis or ultrafiltration failure while on PD or repeated PD-related peritonitis causing peritoneal damages, will be put on chronic haemodialysis (HD). According to the Hong Kong Renal Registry, as of 31 Dec 2017, the total number of dialysis patients was 6,301. Of these 6,301 patients, 4,439 patients were on PD and 1,862 patients were on HD. Therefore, among the dialysis population, 70% of patients were treated with PD and 30% of patients were treated with HD.

HAEMODIALYSIS APPARATUS AND SOLUTE CLEARANCE

Haemodialysis apparatus can be divided into a blood circuit and a dialysis solution circuit, both of which meet at the dialyzer. The blood circuit starts at the vascular access, from which blood is pumped through an arterial blood line to the dialyzer. Blood is then returned from the dialyzer to the patient via a venous blood line.[2] Blood purification occurs inside the dialyzer. Solute is cleared from the blood by either diffusive or convective transport. Diffusive transport is the primary mechanism of solute removal in HD. This transport depends on the interface of the blood with the dialysate, which occurs via pores located within the dialysis membrane of the dialyzer. Diffusion of solutes proceeds down a concentration gradient from blood to dialysate. With high rates of ultrafiltration, convective transport of solute also occurs. The frictional force between water and solutes, which is called solvent drag, results in convective transport of solutes in the same direction as water. The process of convection during haemofiltration, i.e. solute removal coupled to large-volume transmembrane ultrafiltration, removes a broader size spectrum of solutes than diffusion does during HD. Therefore, this convective process enhances middle molecules removal.[3]

HIGH-FLUX HAEMODIALYSIS

Middle molecules have a wide range of molecular weights from 500 Da to 60 kDa.[4] β2-microglobulin (β2M), with a molecular weight of 11.8 kDa, is one of these middle molecules and has been shown to play an important role in the pathogenesis of dialysis-related amyloidosis.[5] High-flux HD utilises HD membranes with higher permeability for water and solutes compared with conventional low-flux HD. These high-flux membranes are made from synthetic materials such as polysulfone and polyamide and permit higher clearances for middle molecules than the conventional low-flux membranes.[3] The primary findings of three large randomised controlled trials – HEMO Study, Membrane Permeability Outcome (MPO) trial and EGE Study showed no survival benefit with high-flux over low-flux dialyzers.[6-8] However, a post-hoc analysis of the HEMO Study showed that patients treated with dialysis for more than 3.7 years prior to randomisation had a lower risk of death with high-flux compared to low-flux dialyzers.[6] In the MPO trial, subgroup analysis showed that there was a statistically significant reduction in all-cause mortality in the high-flux versus the low-flux group among patients with serum albumin ≤ 40 g/L. Post-hoc subgroup analyses also demonstrated improved survival associated with high-flux versus low-flux dialyzers among those with diabetes.[7] In the EGE Study, a post-hoc analysis also suggested a benefit associated with high-flux versus low-flux dialysis in improving cardiovascular event–free survival among those with diabetes.[8] From these results, patients with lower serum albumin, longer dialysis vintage, or diabetes should be considered a priority for selection of high-flux dialyzers.

HAEMODIAFILTRATION

Haemodiafiltration (HDF) is a blood purification method combining haemodialysis and haemofiltration. Haemodialysis, as mentioned earlier, is a transport process by which a solute passively diffuses down its concentration gradient from one fluid compartment to another. Haemofiltration refers to the use of a hydrostatic pressure gradient to induce the convection of plasma water across the membrane of a hemofilter. Haemodiafiltration therefore removes toxins by convection in addition to diffusion. On-line HDF is a method of HDF using on-line prepared bicarbonate dialysate and substitution solution for replacement of the large volume of ultrafiltration. Our previous study has demonstrated that the percentage reduction of serum β2M level during one session of on-line HDF was significantly higher when compared with high-flux HD (75 ± 4 % vs 51 ± 7 %, p <0.001), and after 14 months of HDF, the patients had significant reduction of both the pre-dialysis and post-dialysis β2M levels.[9]

Of the seven randomised controlled trials comparing on-line HDF to either low-flux[10-12] or high-flux HD[13-16],

only one trial, the ESHOL Study, showed significantly reduced all-cause and cardiovascular mortality with on-line HDF compared to high-flux HD.[14] The other six trials including the CONTRAST Study,[10] the Turkish OL-HDF Study[13] and the recent FRENCHIE Study[16] found no benefit of on-line HDF on mortality. One pooled individual participant data analysis from four randomised controlled trials on the effects of on-line HDF versus conventional HD showed that on-line HDF reduces the risk of mortality in ESRD patients,[17] while two other meta-analyses did not show benefit of convective dialysis on mortality.[18-19] For the relation between convection volume of HDF and mortality, survival benefit was observed in DOPPS patients with a substitution volume >15 L per session.[20] The CONTRAST Study showed that the hazard ratio of all-cause mortality was considerably lower in the patient group treated with the highest delivered convective volumes (>21.95 L).[10] In a post-hoc analysis of the Turkish OL-HDF Study, the subgroup of on-line HDF patients treated with a median substitution volume >17.4 L per session had better cardiovascular and overall survival compared with the high-flux HD group.[13] Similarly, the post-hoc analysis in the ESHOL Study showed a 40% and 45% mortality risk reduction in patients receiving convection volumes between 23–25 L/session and >25 L/session, respectively.[14] From these results, it seems that achieving higher convective volume is associated with better survival in on-line HDF treatment. Nevertheless, further large scale studies are needed before on-line HDF can be recommended versus conventional HD.

HIGH CUT-OFF HAEMODIALYSIS

High cut-off haemodialysis (HCO-HD) has been designed to remove serum free light chains (FLC) in patients with cast nephropathy secondary to multiple myeloma. The molecular weight of lambda and kappa light chains are 45 kDa and 22.5 kDa respectively. The HCO-HD dialyzer contains large membrane pores with high permeability to these light chains. The cut-off value of the HCO membrane is 45 kDa.[21] Despite this cut-off value, with extended dialysis of 8 hours, albumin (68 kDa) loss is significant due to non-uniformity of the pores, and so, replacement with albumin solution is required.[22,23]

Local reports have shown that HCO-HD combined with bortezomib-based chemotherapy effectively removes serum FLC in patients with myeloma kidney.[24,25] A multi-center retrospective studies involving 16 centers across 9 countries have demonstrated that combination of extended HCO-HD and chemotherapy resulted in sustained reductions in serum FLC levels in the majority of patients and 63% of patients independent of dialysis.[26] A recent randomised controlled trial by the MYRE Study Group has however shown that, among patients with myeloma cast nephropathy treated with a bortezomib-based chemotherapy regimen, the use of high cut-off haemodialysis compared with high-flux HD did not result in a statistically significant difference in HD independence at 3 months; but this study might have been underpowered to identify an early clinically important difference.[27] Another randomised controlled trial, the EuLITE study, is on-going with the aim to investigate the clinical benefits of HCO-HD in patients with cast nephropathy, dialysis dependent acute renal failure and de novo multiple myeloma. The primary outcome for this study will be independence of dialysis at 3 months, and the secondary outcomes will be reduction in serum FLC concentrations, duration of dialysis requirement, myeloma response and survival.[28]

MEDIUM CUT-OFF HAEMODIALYSIS (EXPANDED HAEMODIALYSIS, HD*x*)

The clearance of middle molecules with molecular weight >15 kDa (large middle molecules) is low with high-flux membranes.[29] The development of a new generation of dialysis membranes, the medium cut-off (MCO) membranes allow the removal of these large middle molecules up to approximately 50 kDa.[30] Unlike the HCO membranes, the MCO membranes have significantly less albumin loss due to the tighter distribution of pores.[23,30] The dialysis using this MCO membrane is known as expanded haemodialysis (HDx).[31] Twenty-seven large middle molecules (molecular weight >15 kDa) have been identified.[23] In dialysis patients, these molecules have been shown to be involved in the development of atherosclerotic cardiovascular disease, e.g. IL-6 (24.5 kDa), IL-18 (24 kDa), TNF-α (17 kDa) and IL-1β (17.5 kDa); cardiac hypertrophy e.g. FGF-23 (32 kDa); secondary immunodeficiency, e.g. Ig light chains (lambda 45 kDa, kappa 22.5 kDa), retinol binding protein 4 (21.2 kDa) and FGF-23; and chronic inflammation, e.g. IL-6, IL-1β, TNF-α and the soluble TNF receptors 1 (27 kDa) and receptor 2 (17 kDa).[23]

Kirsch et al has studied 39 HD patients and showed that clearances of α1-microglobulin (33 kDa), complement factor D (24 kDa), kappa FLC (22.5 kDa) and myoglobin (17 kDa) were greater with MCO-HD than with high-flux HD and similar to or greater than clearances with HDF.[32] A more recent study on 18 HD patients has demonstrated that MCO-HD is superior to standard high-flux HD in the removal of middle and larger middle molecules and is not inferior to on-line HDF in the clearance of small and larger middle molecules.[33] The REMOVAL-HD study is currently underway and will address the safety, efficacy and the impact on patient-centered outcomes with the use of MCO dialyzer in chronic HD patients.[34]

NOCTURNAL HOME HAEMODIALYSIS

Conventional haemodialysis (HD) involves a dialytic therapy performed two or three times a week with a duration of 4 to 5 hours for each session, either in-centre or at a satellite centre. With this dialysis schedule, the interdialytic interval is long, and rapid solute and fluid removal are needed during each dialysis session, resulting in significant problems such as intradialytic hypotension, high interdialytic weight gain and fluid retention. Dialysis with longer durations and higher frequencies correlates with better outcomes.[35,36] The ideal dialysis regimen should be longer, more frequent and be done at home at night time during sleep. This rationale was used to design nocturnal home haemodialysis (NHHD).[37]

NHHD is a type of intensive haemodialysis using frequent and long dialysis treatment. A randomised

controlled trial by Culleton et al in Canada has shown that frequent nocturnal HD six times weekly significantly decreased left ventricular mass compared with conventional HD three times weekly.[38] Frequent nocturnal HD was associated with clinically and statistically significant improvements in selected kidney-specific domains of quality of life. It was also associated with improvements in systolic blood pressure and mineral metabolism, including a reduction in or discontinuation of antihypertensive medications and oral phosphate binders.[38] Another randomised controlled trial, the Frequent Hemodialysis Network (FHN) Trial, comparing NHHD six times per week and conventional HD three times per week, did not find a significant effect of NHHD for either of the two coprimary outcomes: death or left ventricular mass.[39] Patients in the nocturnal arm had improved control of hyperphosphatemia and hypertension. However, the major limitations of this trial were the relatively small sample size and the lower adherence to the dialysis prescription in the frequent nocturnal arm, both of which reduced the power of the study.[39] Nevertheless, a recent report on the 17-yeat experience of an Australia NHHD centre showed excellent long-term technique and patient outcomes with median technique survival of 7.8 years and median patient survival of 14.6 years.[40]

In Hong Kong, the Nocturnal Home Haemodialysis Programme was started in 2006.[41] Hong Kong has piloted the NHHD program in Asia. Patients are dialyzing on alternate nights (3.5 sessions a week) for 6-9 hours per session.[42] According to the Hong Kong Renal Registry, as of 31 Dec 2017, the total number of NHHD patients was 216. The total number of HD patients was 1,862 and the total number of dialysis patients including PD and HD was 6,301. Therefore, the percentage of NHHD among all HD patients was 11.6% and the percentage among all dialysis patients was 3.4%. Regarding the local data on NHHD, our previous study on one year experience of alternate night NHHD has demonstrated benefits in terms of anaemia control, erythropoietin requirement, serum phosphate and calcium phosphate product reduction, blood pressure control, haemodialysis adequacy and quality of life.[43] Subsequently, our group has carried out a multi-centre retrospective study on 98 patients from 4 NHHD centres in Hong Kong.[42] The results showed that after 12 months of NHHD, the erythropoietin (EPO) dose requirement significantly decreased from 111.2 ± 66.3 before NHHD to 78.1 ± 76.1 U/kg/week (n=81, p <0.001) (Fig. 1). Despite a reduction in EPO dose, haemoglobin increased from 9.9 ± 1.6 g/dL to 10.7 ± 1.7 g/dL (n=95, p <0.001). Fourteen percent of patients were able to stop EPO after NHHD. Serum phosphate level reduced from a baseline of 1.94 ± 0.61 to 1.43 ± 0.38 mmol/L (p <0.001) and calcium phosphate product decreased from 4.50 ± 1.47 to 3.35 ± 0.92 $mmol^2/L^2$ (p <0.001). Phosphate binder dose was greatly reduced and 57% of patients were able to stop taking phosphate binders (Fig. 3). Standard Kt/V (an index of dialysis adequacy) increased from a baseline (during conventional HD) of 2.30 ± 0.35 to 3.42 ± 0.37 (p <0.001). Systolic blood pressure decreased from 148 ± 18 to 138 ± 17 mmHg (p <0.001) and diastolic blood pressure decreased from 90 ± 12 to 83 ± 11 mmHg (p <0.001). The number of antihypertensive medications reduced from 2.2 ± 1.2 to 1.6 ± 1.3 (p <0.001) with 19% of patients able to stop all antihypertensive (Fig. 4).[42]

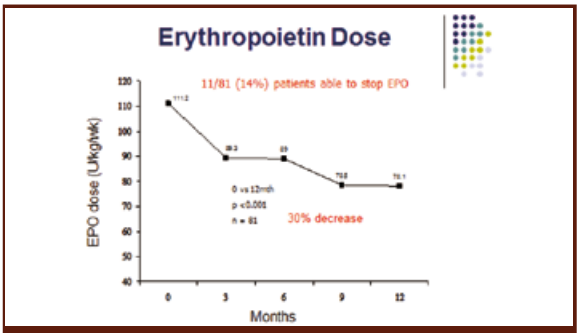

Fig 1. Erythropoietin (EPO) dose requirement before and 12 months after nocturnal home haemodialysis (NHHD). Reproduced from reference 42.

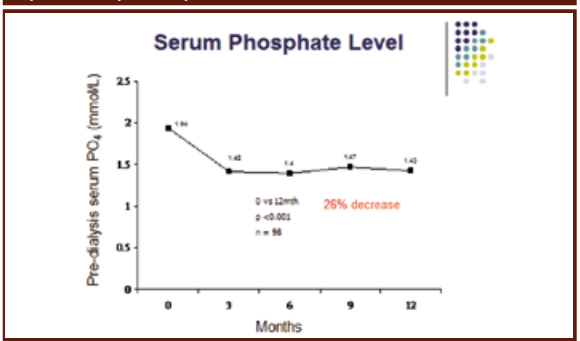

Fig. 2. Serum phosphate level before and 12 months after NHHD. Reproduced from reference 42.

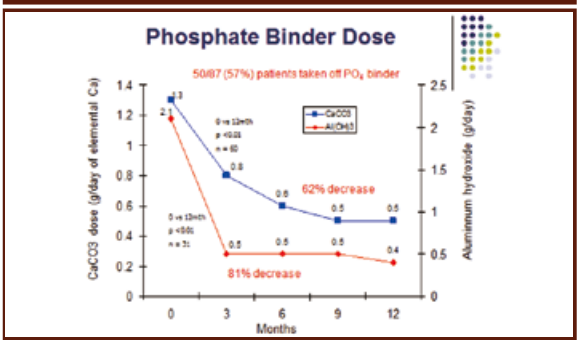

Fig. 3. Phosphate binder dose before and 12 months after NHHD. Reproduced from reference 42.

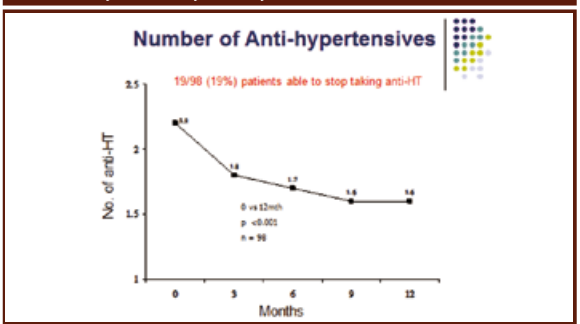

Fig. 4. Number of antihypertensive medications before and 12 months after NHHD. Reproduced from reference 42.

Local single-center studies on specific clinical parameters have also shown benefits of NHHD. Poon et al performed a matched controlled retrospective study and demonstrated that NHHD with an alternate night schedule improved anemia and reduced erythropoiesis-

Abbreviations: CKD, chronic kidney disease; ULT, urate-lowering therapy; sUA, serum uric acid.

Reference :
1. Becker MA et al. N Engl J Med 2005;353(23):2450-2641 2. Schumacher HR Jr. et al. Rheumatology 2009;48:188-194 3. FEBURIC©HK packaging Insert Oct 2015 4. Sezai A et al. Circ J 2013; 77 (8):2043-2049 5. Tanaka K et al. Clin Exp Nephrol. 2015 Dec; 19(6):1044-53 6. Juraschek SP, et al. Arthritis Care Res. 2015;67(4):588-92.

Abbreviated prescribing information of Feburic film-coated tablets

Version: 003 PI version: Oct 2015 **Composition:** Febuxostat **Indications:** FEBURIC is indicated for the treatment of chronic hyperuricaemia in conditions where urate deposition has already occurred (including a history, or presence of, tophus and/or gouty arthritis). FEBURIC 120 mg is also i
2 days before the beginning of cytotoxic therapy and continue for a minimum of 7 days. **Administration:** May be taken by mouth w/o regard to food. **Contraindications:** Hypersensitivity to the active substance or to any of the excipients. **Special warnings and precautions for use:** ***Cardi***
Anti-Platelet Trialists' Collaboration (APTC) including cardiovascular death, non-fatal myocardial infarction, non-fatal stroke) was observed in the febuxostat total group compared to the allopurinol group in the APEX and FACT studies (1.3 vs. 0.3 events per 100 Patient Years (PYs)), but not in
were 1.2 and 0.6 events per 100 PYs for febuxostat and allopurinol, respectively. No statistically significant differences were found and no causal relationship with febuxostat was established. Identified risk factors among these patients were a medical history of atherosclerotic disease and/or
monitoring as clinically appropriate. ***Medicinal product allergy/hypersensitivity***. Rare reports of serious allergic/hypersensitivity reactions, including life-threatening Stevens-Johnson Syndrome, Toxic epidermal necrolysis and acute anaphylactic reaction/shock, have been collected in the p
Eosinophilia and Systemic Symptoms (DRESS) were associated with fever, haematological, renal or hepatic involvement in some cases. Patients should be advised of the signs and symptoms and monitored closely for symptoms of allergic/hypersensitivity reactions. Febuxostat treatment s
anaphylactic reaction/shock, febuxostat must not be re-started in this patient at any time. ***Acute gouty attacks (gout flare)*** Febuxostat treatment should not be started until an acute attack of gout has completely subsided. Gout flares may occur during initiation of treatment due to changing se
should be managed concurrently as appropriate for the individual patient. Continuous treatment with febuxostat decreases frequency and intensity of gout flares. ***Xanthine deposition*** In patients in whom the rate of urate formation is greatly increased (e.g. malignant disease and its treatmen
febuxostat, its use in patients with Lesch-Nyhan Syndrome is not recommended. ***Mercaptopurine/azathioprine*** Febuxostat use is not recommended in patients concomitantly treated with mercaptopurine/azathioprine. Where the combination cannot be avoided patients should be closely monitor
Co-administration of febuxostat 80 mg and theophylline 400 mg single dose in healthy subjects showed absence of any pharmacokinetic interaction. Febuxostat 80 mg can be used in patients concomitantly treated with theophylline without risk of increasing theophylline plasma levels. No data
thereafter based on clinical judgment. ***Thyroid disorders*** Increased TSH values (> 5.5 µIU/mL) were observed in patients on long-term treatment with febuxostat (5.5%) in the long term open label extension studies. Caution is required when febuxostat is used in patients with alteration of thyroi
reported adverse reactions in clinical trials (4,072 subjects treated at least with a dose from 10 mg to 300 mg) and post-marketing experience in gout patients are gout flares, liver function abnormalities, diarrhoea, nausea, headache, rash and oedema. These adverse reactions were mostly mild
to < 1/1,000) adverse reactions occurring in patients treated with febuxostat are listed below. The frequencies are based on studies and post-marketing experience in gout patients. Within each frequency grouping, adverse reactions are presented in order of decreasing seriousness. Advers
disorders: Uncommon: Blood thyroid stimulating hormone increased. **Eye disorders:** Rare: Blurred vision.**Metabolism and nutrition disorders:** Common***: Gout flares. Uncommon: Diabetes mellitus, hyperlipidemia, decrease appetite, weight increase. Rare: Weight decrease, increase app
Rare: Tinnitus. **Cardiac disorders:** Uncommon: Atrial fibrillation, palpitations, ECG abnormal, left bundle branch block (see section Tumor Lysis Syndrome), sinus tachycardia (see section Tumor Lysis Syndrome). **Vascular disorders:** Uncommon: Hypertension, flushing, hot flush, haemorrha
disease, vomiting, dry mouth, dyspepsia, constipation, frequent stools, flatulence, gastrointestinal discomfort. Rare: Pancreatitis, mouth ulceration. Hepato-biliary disorders: Common: Liver function abnormalities**. Uncommon: Cholelithiasis. Rare: Hepatitis, jaundice*, liver injury*.**Skin and sub**
Stevens-Johnson Syndrome*, angioedema*, drug reaction with eosinophilia and systemic symptoms*, generalized rash (serious)*, erythema, exfoliative rash, rash follicular, rash vesicular, rash pustular, rash pruritic*, rash erythematous, rash morbilifom, alopecia, hyperhidrosis. **Musculoskeletal a**
haematuria, pollakiuria, proteinuria. Rare: Tubulointerstitial nephritis*, micturition urgency. **Reproductive system and breast disorder:** Uncommon: Erectile dysfunction. **General disorders and administration site conditions:** Common: Oedema. Uncommon: Fatigue, chest pain, chest discon
haematocritic decrease, blood lactate dehydrogenase increased, blood potassium increase. Rare: Blood glucose increase, activated partial thromboplastin time prolonged, red blood cell count decrease, blood alkaline phosphatase increase.* Adverse reactions coming from post-marketing exp
controlled studies. *Description of selected adverse reactions*- Rare serious hypersensitivity reactions to febuxostat, including Stevens-Johnson Syndrome, Toxic epidermal necrolysis and anaphylactic reaction/shock, have occurred in the post-marketing experience. Stevens-Johnson Syndrome
generalised or exfoliative rashes, but also skin lesions, facial oedema, fever, haematologic abnormalities such as thrombocytopenia and eosinophilia, and single or multiple organ involvement (liver and kidney including tubulointerstitial nephritis). Gout flares were commonly observed soon aft
(FLO-01) study comparing febuxostat with allopurinol (346 patients undergoing chemotherapy for haematologic malignancies and at intermediate-to-high risk of TLS), only 22 (6.4%) patients overall experienced adverse reactions, namely 11 (6.4%) patients in each treatment group. The maj
bundle branch block, sinus tachycardia. Vascular disorders: Uncommon: haemorrhage **Full prescribing information is available upon request.**

For Unmet Needs in Patients with Gout & CKD [1-5]

50% of Gout Patients on ULT and 69% of Gout & CKD Patients Can't Meet sUA Target Level in the U.S. [6]

ndicated for the prevention and treatment of hyperuricaemia in adult patients undergoing chemotherapy for haematologic malignancies at intermediate to high risk of Tumor Lysis Syndrome (TLS). FEBURIC is indicated in adults. **Dosage: Gout** 80 mg once daily. **TLS** 120mg once daily; start
o-vascular disorders *Treatment of chronic hyperuricaemia* : Treatment with febuxostat in patients with ischaemic heart disease or congestive heart failure is not recommended. A numerical greater incidence of investigator-reported cardiovascular APTC events (defined endpoints from the
h the CONFIRMS study. The incidence of investigator-reported cardiovascular APTC events in the combined Phase 3 studies (APEX, FACT and CONFIRMS studies) was 0.7 vs. 0.6 events per 100 PYs. In the long-term extension studies the incidences of investigator-reported APTC events
myocardial infarction, or of congestive heart failure. *Prevention and treatment of hyperuricaemia in patients at risk of TLS*. Patients undergoing chemotherapy for haematologic malignancies at intermediate to high risk of Tumor Lysis Syndrome treated with FEBURIC should be under cardiac
ost-marketing experience. In most cases, these reactions occurred during the first month of therapy with febuxostat. Some, but not all of these patients reported renal impairment and/or previous hypersensitivity to allopurinol. Severe hypersensitivity reactions, including Drug Reaction with
hould be immediately stopped if serious allergic/hypersensitivity reactions, including Stevens-Johnson Syndrome, occur since early withdrawal is associated with a better prognosis. If patient has developed allergic/hypersensitivity reactions including Stevens-Johnson Syndrome and acute
rum uric acid levels resulting in mobilization of urate from tissue deposits. At treatment initiation with febuxostat flare prophylaxis for at least 6 months with an NSAID or colchicine is recommended. If a gout flare occurs during febuxostat treatment, it should not be discontinued. The gout flare
t, Lesch-Nyhan syndrome) the absolute concentration of xanthine in urine could, in rare cases, rise sufficiently to allow deposition in the urinary tract. This has not been observed in the pivotal clinical study with FEBURIC in the Tumor Lysis Syndrome. As there has been no experience with
ed. A reduction of dosage of mercaptopurine or azathioprine is recommended in order to avoid possible haematological effects. ***Organ transplant recipients*** As there has been no experience in organ transplant recipients, the use of febuxostat in such patients is not recommended.***Theophylline***
s available for febuxostat 120 mg. ***Liver disorders*** During the combined phase 3 clinical studies, mild liver function test abnormalities were observed in patients treated with febuxostat (5.0%). Liver function test is recommended prior to the initiation of therapy with febuxostat and periodically
d function. ***Lactose*** Febuxostat tablets contain lactose. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine. **Undesirable effects:** *Summary of the safety profile* - The most commonly
r moderate in severity. Rare serious hypersensitivity reactions to febuxostat, some of which were associated to systemic symptoms, have occurred in the post-marketing experience. *List of adverse reactions* - Common (≥ 1/100 to < 1/10), uncommon (≥ 1/1,000 to < 1/100) and rare (≥ 1/10,000
e reactions in combined phase 3, long-term extension studies and post-marketing experience in gout patients. **Blood and lymphatic system disorders:** Rare: Pancytopenia, thrombocytopenia. I**mmune system disorders:** Rare: Anaphylactic reaction*, drug hypersensitivity*. **Endocrine**
petite, anorexia. **Psychiatric disorders:** Uncommon: Libido decreased, insomnia. Rare: Nervousness. **Nervous system disorders:** Common: Headache. Uncommon: Dizziness, paraesthesia, hemiparesis, somnolence, altered taste, hypoaesthesia, hyposmia. **Ear and labyrinth disorders:**
ge (see section Tumor Lysis Syndrome). **Respiratory system disorders:** Uncommon: Dyspnoea, bronchitis, upper respiratory tract infection, cough **Gastrointestinal disorders:** Common: Diarrhoea**, nausea. Uncommon: Abdominal pain, abdominal distension, gastro-oesophageal reflux
cutaneous tissue disorders: Common: Rash (including various types of rash reported with lower frequencies, see below). Uncommon: Dermatitis, urticaria, pruritus, skin discolouration, skin lesion, petechiae, rash macular, rash maculopapular, rash popular. Rare: Toxic epidermal necrolysis*,
and connective tissue disorders: Uncommon: Arthralgia, arthritis, myalgia, musculoskeletal pain, muscle weakness, muscle spasm, muscle tightness, bursitis. Rare: Rhabdomyolysis*, joint stiffness, musculoskeletal stiffness. **Renal and urinary disorders:** Uncommon: Renal failure, nephrolithiasis,
mfort. Rare: Thirst.**Investigations:** Uncommon: Blood amylase increase, platelet count decrease, WBC decrease, lymphocyte count decrease, blood creatine increase, blood creatinine increase, haemoglobin decrease, blood urea increase, blood triglycerides increase, blood cholesterol increase,
erience ** Treatment-emergent non-infective diarrhoea and abnormal liver function tests in the combined Phase 3 studies are more frequent in patients concomitantly treated with colchicine. *** See full prescribing information for incidences of gout flares in the individual Phase 3 randomized
and Toxic epidermal necrolysis are characterised by progressive skin rashes associated with blisters or mucosal lesions and eye irritation. Hypersensitivity reactions to febuxostat can be associated to the following symptoms: skin reactions characterised by infiltrated maculopapular eruption,
er the start of treatment and during the first months. Thereafter, the frequency of gout flare decreases in a time-dependent manner. Gout flare prophylaxis is recommended. Tumor Lysis Syndrome- *Summary of the safety profile*- In the randomized, double-blind, Phase 3 pivotal FLORENCE
ority of adverse reactions were either mild or moderate. Overall, the FLORENCE trial did not highlight any particular safety concern in addition to the previous experience with FEBURIC in gout, with the exception of the following three adverse reactions. Cardiac disorders: Uncommon: Left

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stimulating agent requirement as a result of enhanced uremic clearance, and this benefit extended beyond the first year of NHHD.[44] For the cardiac parameters, our group has done an uncontrolled study on 23 patients on left ventricular mass index (LVMI). After 2 years of NHHD, left ventricular hypertrophy improved with LVMI decreasing from 214.4 ± 72.5 at baseline to 191.7 ± 82.2 g/m^2 (P <0.05).[45] Regarding the removal of middle molecules, we have studied 33 patients and found that alternate night NHHD with high-flux dialyzer resulted in a marked percentage reduction (72%) of serum β2-microglobulin level after one session of dialysis, leading to a longitudinal decrease in pre-dialysis β2M level.[46] A recent observational study by Li et al showed that NHHD appeared to offer higher employment rate, lower dosage of aluminum-based phosphate binder and mineral metabolic markers at one year compared with CAPD in Hong Kong.[47]

CONCLUSIONS

Recent advances in HD membrane technology have enabled the development of new generation dialysis membranes, the high cut-off membrane and medium cut-off membrane, which allow removal of serum free light chains in patients with myeloma kidney and removal of large middle molecules respectively. The latter are involved in the development of cardiovascular disease, secondary immunodeficiency and chronic inflammation in dialysis patients. The results of the on-going studies on these new membranes may shed light on their benefits on the clinical outcomes and patient survival.[28,34] From the existing data, nocturnal home haemodialysis is a promising dialytic therapy for ESRD patients receiving chronic HD with benefits on multiple clinical parameters. Nevertheless, large scale randomised controlled trials are needed to demonstrate the benefits of NHHD on patients survival and mortality risk compared with conventional HD.

ACKNOWLEDGEMENTS

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Abbreviations:
CKD = Chronic Kidney Disease, HD = Haemodialysis, IV = Intravenous, ESA = Erythropoiesis Stimulating Agent, TSAT = Transferrin Saturation, Hb = Haemoglobin

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Please refer to the package insert when using a drug product.

Kidney Health for Everyone Everywhere - Kidney Transplant

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INTRODUCTION

The challenge for the global public kidney health has been best captured by the theme "Kidney Health for Everyone Everywhere" under the World Kidney Day 2019.[1] For instance, access to and distribution of renal transplant services across regions vary widely, from 12% in low-income countries to more than 90% in upper-middle-income and high-income countries.[1] In short, there is a well-recognised need to mitigate existing barriers to kidney transplant across countries and regions. Provision of kidney transplantation is important to improve the quality of care across the globe – kidney health for everywhere.

What about the need to achieve equity for everyone? Is it also relevant to make efforts to allow everyone with kidney failure to have chance to be evaluated for transplant?

EVERYONE WITH KIDNEY FAILURE SHOULD HAVE A CHANCE TO BE EVALUATED FOR TRANSPLANT

The management of stage 5 chronic kidney disease, namely patients with estimated glomerular filtration rate less than 15 ml/min/1.73 m^2, has evolved over time. A major reason is the observation that patient survival following renal transplantation is better compared to age-matched individuals remaining on the transplant waiting list for all-cause end-stage renal disease population.[2,3] In other words, benefits of renal transplantation are not simply confined to a better quality of life and reduced medical expenses. There have now been robust data confirming a longer life expectancy offered by transplantation, when compared to dialysis. In fact, a longitudinal study of over 200,000 dialysis patients in the United States showed that the long-term mortality rate was 48 to 82 percent lower among transplant recipients than those on the waiting list.[2] Similar to the results reported in the United States, recipients of a kidney transplant in the United Kingdom have a 68 percent lower long-term risk of dying compared with dialysis patients on the waiting list after adjustment for age, gender, primary renal disease, and length of time on dialysis.[3] These data lend support to advocate consideration of renal transplantation for patients who are considered fit for major surgery and for chronic immunosuppression. In other words, all patients predicted to have an improved life expectancy post-transplantation should be assessed.

HOW CAN WE JUSTIFY CONSIDERING TRANSPLANTATION FOR "EVERYONE"?

Understandably, critical shortage of donor organs for kidney transplantation creates tension between maximising utility and maintaining equity. To illustrate the principle of "chance for everyone" in renal transplant, examples of elderly, obesity and multisystem disease patients will be discussed.

Older Patients

According to the previously mentioned United States database[2], the beneficial effect conferred by renal transplantation was relatively more pronounced among those who were younger, white patients, and younger patients with diabetes. However, elderly patients also benefited from transplantation in the analysis.[2]

It is therefore relevant to question whether, and how, to select older patients who will benefit from kidney transplantation. And what type of kidney donor should be used for a given patient? With the aging population in Hong Kong and increasing prevalent elderly cases of renal failure, there is a legitimate concern for determining eligibility of older patients for kidney transplant wait-listing.

A short answer is that age is not a contraindication to transplantation. There is no upper age limit for transplantation but age-related comorbidity or frailty should be evaluated.

A multicentre study in the United Kingdom showed that improved life expectancy of first deceased-donor transplant recipients over patients remaining on the waiting list is seen across all age groups. Subgroup analysis confirmed significant reduction in the relative risk of death after transplantation in all age groups, although the greatest benefit was achieved in patients aged 50 to 59 years.[3] Recommendation from the European Renal Association-European Dialysis and Transplant Association Descartes Working Group suggests that renal transplantation is safe in the elderly if candidates are carefully selected.[4] Although mandating an age cut-off for transplant eligibility might avoid the higher surgical complications, infection and cardiovascular risk for patients in their late 70s and early 80s, age per se is not a contraindication to transplant candidacy, as long as there is careful evaluation for cardiovascular and malignant disease, as well as frailty. As a rule of thumb, the elderly patients

should be encouraged to consider extended criteria donors and living donors to increase the access to renal transplantation.[4,5]

In addition to gauging survival benefit, it is also important to have a better understanding of older transplant recipients in terms of their expectation and treatment goal. Can they regain strength, vigor and vitality? Will they feel overwhelmed by slow and complicated recuperation?[6,7] These questions are best addressed by thematic and qualitative research.

Obese Patients

One of the major cautions in offering kidney transplantation to obese patients (body mass index BMI > 30 kg/m^2) is based on the technical difficulties and hence increased risk of peri-operative complications.

There is diverse practice in wait-listing obese patients for renal transplantation although obesity is in general not a contraindication. The latest National Institute for Health and Care Excellence (NICE) guideline states that we should not exclude people from receiving a kidney transplant based on BMI alone.[8]

Is there any rationale? First, we need to compare the transplant survival outcomes of obese patients with their outcomes on dialysis. The United States Renal Data System (USRDS) registry data have previously demonstrated a survival advantage for obese recipients of both deceased and living donor transplantation compared with those remaining on dialysis.[9] With regard to mortality, people with a BMI greater than 30 benefited from transplant (as opposed to dialysis) to a similar degree as people with a BMI of 30 or under. Second, we need to assess other transplant risks. Against this background, a systematic review and meta-analysis published in 2014 included 21 studies, with 9,296 patients, and confirmed that obesity was associated with delayed graft function (relative risk 1.41), but not with acute rejection.[10] In addition, there was no association demonstrated between obesity and either graft loss or death in studies of recipients who received a transplanted kidney after 2000.[10]

Having said that, another analysis of 191,091 patients, derived from the Scientific Registry of Transplant Recipient database between the period 1987 to 2013, confirmed recipient obesity as an independent risk factor for adverse outcomes, including delayed graft function, graft failure, proteinuria and acute rejection.[11] In addition, a progressive increase in risk was associated with higher BMI categories. With this knowledge, several international guidelines stated that patients with a BMI greater than 40 kg/m^2 were "unlikely to benefit" from kidney transplantation and required individual assessment.[12,13,14]

Furthermore, obese patients should be screened rigorously for cardiovascular disease and considered on an individual basis. Although obesity is not an absolute contraindication to transplantation, individuals with a BMI greater than 40 kg/m^2 would encounter higher complications.

Multisystem Disease Patients

Worldwide, an estimated prevalence of 3.2 to 517.5 cases per 100,000 individuals are living with systemic lupus erythematosus[15], and they are at increased risk for both kidney failure and complications from immunosuppression. Concerns about wait-listing systemic lupus erythematosus patients for renal transplant include the risk of infections attributed to disease and the immunosuppression prior to transplant, graft thrombosis related to antiphospholipid syndrome, and recurrent lupus nephritis.[16]

To assess the benefit of renal transplant in patients suffering from end-stage renal disease due to lupus nephritis, a recent analysis of 9,659 patients from the United States Renal Data System looked into all-cause mortality in those who had a transplant and those who were wait-listed for a renal transplant.[17] Time-dependent Cox regression analysis demonstrated reduced all-cause mortality with transplant, with an adjusted hazard ratio of 0.30 (95% confidence interval 0.27 to 0.33).[17] Their survival benefit was primarily due to a reduced odds of death from cardiovascular disease and infection. The major strengths of this study include the generalisability and sample size, minimised confounding by contraindication (when their analysis was restricted to wait-listed patients), as well as their robust statistical analysis. Most importantly, the substantial improvement in survival associated with renal transplant for lupus nephritis patients persisted in differential racial subgroups, including white, African Americans, Hispanics, and Asians.[17]

CONCLUSIONS

In summary, the benefits of renal transplantation are worth exploring for different groups of patients suffering from stage 5 chronic kidney disease. In addition to offering benefits in quality of life, reducing disease and economic burden as well as mortality risk, the decision will include assessment of comorbidities, frailty, and respect of patient autonomy. The hurdle of organ donor shortage should also be addressed when we aim to maximise the choice of treatment for potential kidney transplant candidates.[18] Further efforts are needed to develop context-specific guidelines that are transparent, methodologically robust, and evidence based, with reference to transplant wait-listing policy.

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World Kidney Day

World Kidney Day is a global **awareness campaign** aimed at raising awareness of the importance of our kidneys.

World Kidney Day comes back every year. All across the globe many hundreds of events take place from public screenings in Argentina to Zumba marathons in Malaysia. It is to create awareness. Awareness about preventive behaviors, awareness about risk factors, and awareness about how to live with a kidney disease. We do this because we want kidney health for all.

MISSION
World Kidney Day aims to raise awareness of the importance of our kidneys to our overall health and to reduce the frequency and impact of kidney disease and its associated health problems worldwide.

OBJECTIVES

- Raise awareness about our "amazing kidneys". Highlight that diabetes and high blood pressure are key risk factors for Chronic Kidney Disease (CKD).
- Encourage systematic screening of all patients with diabetes and hypertension for CKD.
- Encourage preventive behaviours.
- Educate all medical professionals about their key role in detecting and reducing the risk of CKD, particularly in high risk populations.
- Stress the important role of local and national health authorities in controlling the CKD epidemic. On World Kidney Day all governments are encouraged to take action and invest in further kidney screening.
- Encourage Transplantation as a best-outcome option for kidney failure, and the act of organ donation as a life-saving initiative.

HISTORY OF WORLD KIDNEY DAY
World Kidney Day started in 2006 and has not stopped growing ever since. Every year, the campaign highlights a particular theme.

World Kidney Day is observed annually on the second Thursday in March in over 88 countries. WKD is a joint initiative of the International Society of Nephrology (ISN) and the International Federation of Kidney Foundations (IFKF).

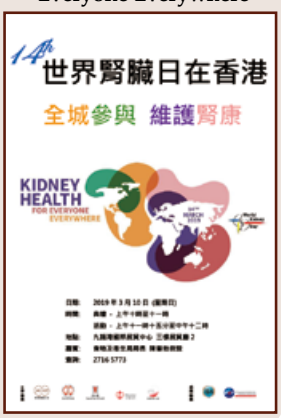
STEERING COMMITTEE
The Steering Committee for World Kidney Day 2019 is composed of nephrology and transplantation experts who live and work in Africa, Asia, Australia, Europe, South America and North America. Prof Philip Kam-tao Li, the Co-chairman for ISN, from Hong Kong is on the Steering Committee.

The World Kidney Day (WKD) has been held in Hong Kong annually since 2006. The WKD event in Hong Kong is co-organised by the Hong Kong Kidney Foundation, Hong Kong Society of Nephrology, Hospital Authority, Department of Health and Hong Kong Association of Renal Nurses. Prof SF Lui spearheads the promotional and educational survey program.

WKD@HK 世界腎臟日 2006-2019

• 2019 Kidney Health for Everyone Everywhere	全城參與　維護腎康
• 2018 Kidneys and Women's Health	腎臟與婦女健康
• 2017 Kidney Disease & Obesity – Healthy Lifestyle for Healthy Kidneys	腎臟疾病和肥胖 健康生活保腎康
• 2016 Kidney Disease & Children – Act Early to Prevent It!	兒童腎病及早預防
• 2015 Kidney Health for All	全民腎康，全城響應
• 2014 Chronic Kidney Disease (CKD) and aging	愛長者，防腎病
• 2013 Kidneys for Life – Stop Kidney Attack!	防止急性腎損傷
• 2012 Donate – Kidneys for Life – Receive	愛心捐腎 重獲新生
• 2011 Protect your kidneys: Save your heart	齊保腎 同護心
• 2010 Protect your kidneys: Control diabetes	保護您的腎臟 – 控制糖尿病
• 2009 Protect your kidneys: Keep your pressure down	為保腎臟好 誓防血壓高
• 2008 Your amazing kidneys!	奇妙的腎
• 2007 CKD: Common, harmful and treatable	腎病十分普遍而且具傷害性，如及早發覺是可有合適的治療
• 2006 Are your kidneys OK?	您的腎臟健康嗎？

2019 theme:
Kidney Health for Everyone Everywhere



Web link English: https://www.worldkidneyday.org/
Web link Chinese: https://www.worldkidneyday.org/wkd-2019-chinese-traditional/

Acknowledgement: Dr KS Choi, Dr Samuel Fung, Prof Philip Li, Prof SF Lui (Past Chairmen HKSN) &
Dr YL Cheng (Chairman HKSN)

Hong Kong Kidney Foundation

http://www.hkkf.org.hk

A non-profit making, voluntary organization, incorporated on 10th July 1979.

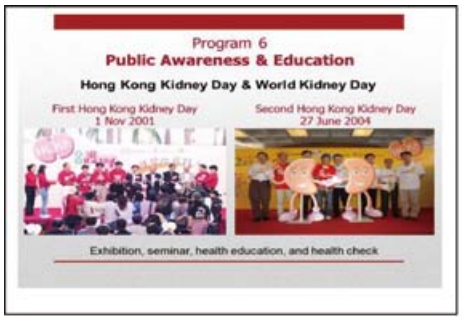
Vision:
Better kidney health for all and better quality of life for people affected by kidney disease.

Mission:
Promote kidney health and support people suffering from kidney disease.

Key Programmes
(1) Clinical Services
(2) Education Programme for Healthcare Professionals
(3) Visiting Professorship
(4) Fellowship and Scholarship for Overseas Training
(5) Funding for Research Projects
(6) Public Awareness & Education
(7) Promotion of Organ Donation
(8) Fundraising
(9) Patient Activities

Over the past 40 years HKKF has provided haemodialysis treatment for 600+ patients and is currently delivering 7,000+ sessions of HD treatment per year. Since August 1997, HKKF has procured 616 Automated Peritoneal Dialysis machine through donation (equivalent to HK$51m). So far, 1,473 patients have received free loan of APD machine from HKKF for home treatment.

Acknowledgement: Prof SF Lui, Dr CS Li, KL Tong (Past Chairmen, HKSN)



Hong Kong Society of Nephrology

This year HKSN will celebrate it's 40th anniversary. The occasion draws to attention to the need for further improving and maintain the health of the population and the provision of services to cater for its needs.

The Hong Kong Society of Nephrology was established in 1979. It is a non-profit making professional organisation consisting of doctors, nurses and other allied health staff that are interested in renal diseases.

MAIN OBJECTIVES OF THE SOCIETY:
1. To promote the interest in and a better under understanding of Nephrology in Hong Kong.
2. To provide a venue for discussion of problems related to Nephrology.
3. To endeavour to improve the standard of Nephrology care.
4. To provide a means of liaison with workers in Nephrology in other parts of the world.

ACTIVITIES
Web Link http://www.hksn.org/index.html
Facebook Web link https://www.facebook.com/HongKongSocietyofNephrology/

Acknowledgement: Dr Cheng YL (Chairman HKSN) Dr KS Choi, Dr Samuel Fung (Past Chairmen, HKSN)

Website

Facebook

Certificate Course for General Practitioners, Nurses and Health Care Providers who are interested in Cardiology

● Course No. C331 ● CME/CNE Course

Jointly organised by

The Federation of Medical Societies of Hong Kong

Hong Kong College of Cardiology

Certificate Course on

Cardiology 2019

Date	Topics	Speakers
7 Mar	Management of stable angina and chronic coronary artery disease Management of Heart failure	Dr. LEE Kar Fai, Victor Specialist in Cardiology Private Practice Dr. KWOK Chun Kit, Kevin Specialist in Cardiology Private Practice
14 Mar	Advances in management of valvular heart disease	Dr. CHEUNG Shing Him, Gary Specialist in Cardiology Private Practice
21 Mar	Management of acute coronary syndrome	Dr. LEE Kin Tong, Joe Specialist in Cardiology Private Practice
28 Mar	Cardiovascular risk assessment and management (including update in management of hypertension and hypercholesterolemia)	Prof. CHEUNG Man Yung, Bernard Sun Chieh Yeh Heart Foundation Professor in Cardiovascular Therapeutics, Department of Medicine, University of Hong Kong, Queen Mary Hospital
4 Apr	Cardiac emergencies: acute pulmonary edema, acute pulmonary embolism, acute aortic disease and hypertension crisis Management of AF	Dr. FANG Jonathan Xinguo Resident, Cardiology and Internal Medicine, Queen Mary Hospital Dr. LUK Ngai Hong, Vincent Associate Consultant, Medical Department, Queen Elizabeth Hospital, Hong Kong
11 Apr	Practical approaches to syncope and palpitation	Dr. KO Kwok Chun, Jason Specialist in Cardiology Private Practice

Dates : 7, 14, 21, 28 March 2019 & 4, 11 April, 2019 (Every Thursday)
Time : 7:00 pm – 8:30 pm
Venue : Lecture Hall, 4/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong
Course Fee : HK$750 (6 sessions)
Enquiry : The Secretariat of The Federation of Medical Societies of Hong Kong
Tel: 2527 8898 Fax: 2865 0345 Email: info@fmshk.org

Application form can be downloaded from website: http://www.fmshk.org

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					* FMSHK Certificate Course on Mental Health 2019 **1**	**2**
3	* FMSHK Certificate Course on Osteoporosis 2019 **4**	* HKMA Tai Po Community Network - Optimizing Diabetes Management for Type 2 Diabetes Patients with CV Risk * HKMA Yau Tsim Mong Community Network - Updates in Medical Treatment of Benign Prostatic Hyperplasia (BPH) * HKMA-HKS&H CME Programme 2018-2019 * FMSHK Certificate Course on Complaint Management 2019 * HKMA Council Meeting **5**	* HKMA Shatin Doctors Network - Updates on Rosacea Management * HKMA Central, Western & Southern Community Network: Updates on Antiviral Treatment for Influenza * HKMA CME - How the UK Achieves the Highest Influenza Vaccination Rates in Europe & The Impact of Vaccination Children Against Influenza in the UK * Course on Community Nephrology (Facebook CME Live) * FMSHK Certificate Course on Communication and Swallowing Development and Disorders in Children 2019 **6**	* HKMA Kowloon East Community Network - Management of Lung Cancer: Update in Targeted Treatment * HKMA New Territories West Community Network - Management of Sarcopenia * FMSHK Certificate Course in Cardiology 2019 **7**	* FMSHK Certificate Course on Mental Health 2019 **8**	* Refresher Course for Health Care Providers 2018/2019 - Inflammatory Skin Conditions in Primary Care **9**
* Federation Sports Day 2019 – Day 1 **10**	* FMSHK Certificate Course on Osteoporosis 2019 **11**	* HKMA Kowloon West Community Network - Newer Oral Hypoglycemic Agents in Management of Diabetic Patients with Atherosclerotic Cardiovascular Disease * FMSHK Certificate Course on Complaint Management 2019 * FMSHK Officers' Meeting **12**	* The Hong Kong Neurosurgical Society Monthly Academic Meeting –Intraoperative monitoring in spinal surgery * HKMA Central, Western & Southern Community Network: ENT Updates: Allergic Rhinitis and Sialendoscopy * FMSHK Certificate Course on Communication and Swallowing Development and Disorders in Children 2019 **13**	* HKMA Hong Kong East Community Network - Sports Injuries and Osteoarthritis * FMSHK Certificate Course in Cardiology 2019 **14**	* FMSHK Certificate Course on Mental Health 2019 **15**	* MPS Workshop - Achieving Safer and Reliable Practice **16**
17	* FMSHK Certificate Course on Osteoporosis 2019 **18**	* MPS Workshop - Building Resilience and Avoiding Burnout * FMSHK Certificate Course on Complaint Management 2019 **19**	* Course on Community Nephrology (Facebook CME Live) * FMSHK Certificate Course on Communication and Swallowing Development and Disorders in Children 2019 **20**	* HKMA Kowloon East Community Network - "How to Personalize the Treatment Approach for Patient with Diabetes?" cum Annual Meeting * FMSHK Certificate Course in Cardiology 2019 **21**	* HKMA Yau Tsim Mong Community Network - Updates on Antiviral Treatment for Influenza * HKMA Shatin Doctors Network - Transforming Diabetes Care: Reducing CV Mortality in Patients with Type 2 Diabetes * FMSHK Certificate Course on Mental Health 2019 **22**	**23**
* HKMA Football Day **24** **31**	**25**	* MPS Workshop – Mastering Shared Decision Making * FMSHK Certificate Course on Complaint Management 2019 **26**	* FMSHK Certificate Course on Communication and Swallowing Development and Disorders in Children 2019 **27**	* HKMA Hong Kong East Community Network - Updates on Antiviral Treatment for Influenza * FMSHK Executive Committee Meeting * FMSHK Certificate Course in Cardiology 2019 **28**	* FMSHK Certificate Course on Mental Health 2019 **29**	* MPS Workshop - Mastering Adverse Outcomes **30**

DREAM CRUISES

Happy Dream Holiday

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NOW HK$**2,803** per person up
(Double occupancy)

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24 Feb, 3, 17, 24, 31 Mar,
28 Apr, 5, 19, 26 May &
2, 9, 16, 23 Jun Sailings
Departs Sunday from Hong Kong
Original Price from HK$5,606 per person
NOW HK$**2,803** per person up
(Double occupancy)

BUY 1 GET 1 FREE

2-night Weekend Getaway
8, 15, 22, 29 Mar Sailings
Departs Friday from Hong Kong
Original Price from HK$2,240 per person
NOW HK$**1,120** per person up
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Terms and Conditions: *The maximum discount shown based on triple sharing in Balcony Deluxe Suite (BDS/BDA) and calculated in HKD. 5-Night cruise will call at Guangzhou (Nansha) for transit. All Hong Kong and Macau passengers must bring their Home Visit Permit. Offer is applicable to specific departures only and cannot be used in conjunction with any other promotional offers. Cruise fares shown are per person based on double sharing in an Inside Stateroom (ISS/ISA) and calculated in HKD. Price excludes gratuities, shore excursion, travel insurances, transportation, visa charges and other incidental charges. Booking is subject to availability by first-come-first-served basis. Dream Cruises reserves the right to amend these Terms and Conditions as well as to vary or terminate any of the offers without prior notice. All information for reference only and subject upon booking. For more details, please refer to Terms and Conditions of the Guest Ticket Contract ("the Passage Contract"). Promotion fare is not applicable to group tour. Photos are for reference only. Activities to be arranged in accordance with the prevailing condition and subject to change without prior notice. **In the event of disputes, decision of Dream Cruises shall be final and binding. (ALLWD18049, ALLWD18070, ALLWD18077, ALLWD19003, ALLWD19024)**

Date / Time	Function	Enquiry / Remarks
1 FRI 7:00 PM	**FMSHK Certificate Course on Mental Health 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
4 MON 7:00 PM	**FMSHK Certificate Course on Osteoporosis 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
5 TUE 1:00 PM	**HKMA Tai Po Community Network - Optimizing Diabetes Management for Type 2 Diabetes Patients with CV Risk** Organiser: HKMA Tai Po Community Network; Chairman: Dr. CHOW Chun Kwan, John; Speaker: Dr. TING Zhao Wei, Rose; Venue: Jade Garden, Shop 302, 3/F, Tai Wo Plaza Phase 1, 12 Tai Wo Road, Tai Wo	Ms. Candice TONG Tel: 2527 8285 1 CME Point
1:00 PM	**HKMA Yau Tsim Mong Community Network - Updates in Medical Treatment of Benign Prostatic Hyperplasia (BPH)** Organiser: HKMA Yau Tsim Mong Community Network; Chairman: Dr. LEUNG Wai Fung, Anders; Speaker: Dr. CHU Wing Hong; Venue: Crystal Ballroom, 2/F, The Cityview Hong Kong, 23 Waterloo Road, Kowloon	Ms. Candice TONG Tel: 2527 8285 1 CME Point
1:00 PM	**HKMA-HKS&H CME Programme 2018-2019** Organiser: Hong Kong Medical Association; Hong Kong Sanatorium & Hospital; Speaker: Dr. LAM Chung Mei, Jamie; Venue: HKMA Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, HK	HKMA CME Department Tel: 2527 8285 1 CME Point
7:00 PM	**FMSHK Certificate Course on Complaint Management 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
9:00 PM	**HKMA Council Meeting** Organiser: The Hong Kong Medical Association; Chairman: Dr. HO Chung Ping, MH, JP; Venue: HKMA Wanchai Premises, 5/F, Duke of Windsor Social Service Building, 15 Hennessy Road, HK	Ms. Christine WONG Tel: 2527 8285
6 WED 1:00 PM	**HKMA Shatin Doctors Network - Updates on Rosacea Management** Organiser: HKMA Shatin Doctors Network; Chairman: Dr. MAK Wing Kin; Speaker: Dr. WAT Yee Man, Mildred; Venue: Diamond Room, 2/F, Royal Park Hotel, 8 Pak Hok Ting Street, Shatin	Ms. Candice TONG Tel: 2527 8285 1 CME Point
1:00 PM	**HKMA Central, Western & Southern Community Network: Updates on Antiviral Treatment for Influenza** Organiser: HKMA Central, Western & Southern Community Network; Chairman: Dr. POON Man Kay; Speaker: Dr. LO Ho Yin, Angus; Venue: HKMA Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, HK	Miss Antonia LEE Tel: 2527 8285 1 CME Point
1:00 PM	**HKMA CME - How the UK Achieves the Highest Influenza Vaccination Rates in Europe & The Impact of Vaccination Children Against Influenza in the UK** Organiser: The Hong Kong Medical Association; Speaker: Dr. George Kassianos MD; Venue: Crystal Ballroom, 2/F, The Cityview Hong Kong, 23 Waterloo Road, Kowloon	HKMA CME Department Tel: 2527 8285 2 CME Point
2:00 PM	**Course on Community Nephrology (Facebook CME Live)** Organiser: The Hong Kong Medical Association; Chairman: Dr. HO Chung Ping, MH, JP; Speaker: Dr. MA King Wing, Terry; Venue: N/A	Mr. Jeff CHENG Tel: 2527 8285 1 CME Point
7:00 PM	**FMSHK Certificate Course on Communication and Swallowing Development and Disorders in Children 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
7 THU 1:00 PM	**HKMA Kowloon East Community Network - Management of Lung Cancer: Update in Targeted Treatment** Organiser: HKMA-Kowloon East Community Network; Chairman: Dr. LEUNG Wing Hong; Speaker: Dr. CHOY Tim Shing; Venue: King Duck, APM Shop L3-1, Level 3, Millennium City 5, 418 Kwun Tong Road, Kowloon	Miss Antonia LEE Tel: 2527 8285 1 CME Point
1:00 PM	**HKMA New Territories West Community Network - Management of Sarcopenia** Organiser: HKMA New Territories West Community Network; Chairman: Dr. CHAN Lam Fung, Lambert; Speaker: Dr. IP Pui Seung, Shirley; Venue: Pak Loh Chiu Chow Restaurant, Shop A316, 3/F, Yoho Mall II, Yuen Long	Miss Antonia LEE Tel: 2527 8285 1 CME Point
7:00 PM	**FMSHK Certificate Course in Cardiology 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
8 FRI 7:00 PM	**FMSHK Certificate Course on Mental Health 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
9 SAT 2:15 PM	**Refresher Course for Health Care Providers 2018/2019 - Inflammatory Skin Conditions in Primary Care** Organiser: Hong Kong Medical Association; HK College of Family Physicians; HA-Our Lady of Maryknoll Hospital; Speaker: Dr. IP Fong Cheng, Francis; Venue: Training Room II, 1/F, OPD Block, Our Lady of Maryknoll Hospital, 118 Shatin Pass Road, Wong Tai Sin, Kowloon	Ms. Clara Tsang Tel: 2354 2440 2 CME Point
10 SUN 7:00 PM	**Federation Sports Day 2019 – Day 1** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Ying Wah College	Ms Sara CHEUNG Tel: 2527 8898 sara.cheung@fmshk.org
11 MON 7:00 PM	**FMSHK Certificate Course on Osteoporosis 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345

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PP-AIP-HKG-0044

Date / Time	Function	Enquiry / Remarks
12 TUE 1:00 PM	**HKMA Kowloon West Community Network - Newer Oral Hypoglycemic Agents in Management of Diabetic Patients with Atherosclerotic Cardiovascular Disease** Organiser: HKMA Kowloon West Community Network; Chairman: Dr. CHAN Siu Man, Bernard; Speaker: Dr. YIP Wai Kwok, Gabriel; Venue: Fulum Palace, Shop C, G/F, 85 Broadway Street, Mei Foo Sun Chuen	Miss Antonia LEE Tel: 2527 8285 1 CME Point
7:00 PM	**FMSHK Certificate Course on Complaint Management 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
8:00 PM	**FMSHK Officers' Meeting** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Gallop, 2/F, Hong Kong Jockey Club Club House, Shan Kwong Road, Happy Valley, Hong Kong	Ms. Nancy CHAN Tel: 2527 8898
13 WED 7:30 AM	**The Hong Kong Neurosurgical Society Monthly Academic Meeting –Intraoperative monitoring in spinal surgery** Organiser: Hong Kong Neurosurgical Society; Venue: Seminar Room, G/F, Block A, Queen Elizabeth Hospital; Chairman: Dr CHU Chi Ho, Alberto; Speaker(s): Dr NG Chat Fong, Ben	1.5 points College of Surgeons of Hong Kong Name: Dr. WONG Sui To Tel: 2595 6456 Fax. No.: 2965 4061
1:00 PM	**HKMA Central, Western & Southern Community Network: ENT Updates: Allergic Rhinitis and Sialendoscopy** Organiser: HKMA Central, Western & Southern Community Network; Chairman: Dr. LAU, Kevin Chung Hang; Speaker: Dr. NG Siu Kwan; Venue: HKMA Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, HK	Miss Antonia LEE Tel: 2527 8285 1 CME Point
7:00 PM	**FMSHK Certificate Course on Communication and Swallowing Development and Disorders in Children 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
14 THU 1:00 PM	**HKMA Hong Kong East Community Network - Sports Injuries and Osteoarthritis** Organiser: HKMA Hong Kong East Community Network; Chairman: Dr. LAM See Yui, Joseph; Speaker: Dr. LAU Yip Kwong, Francis; Venue: HKMA Wanchai Premises, 5/F, Duke of Windsor Social Service Building, 15 Hennessy Road, HK	Ms. Candice TONG Tel: 2527 8285 1 CME Point
7:00 PM	**FMSHK Certificate Course in Cardiology 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
15 FRI 7:00 PM	**FMSHK Certificate Course on Mental Health 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
16 SAT 2:30 PM	**MPS Workshop - Achieving Safer and Reliable Practice** Organiser: Hong Kong Medical Association; Medical Protection Society; Speaker: Dr. CHENG Ngai Shing, Justin; Venue: HKMA Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, HK	HKMA CME Department Tel: 2527 8285 3 CME Point
18 MON 7:00 PM	**FMSHK Certificate Course on Osteoporosis 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
19 TUE 6:30 PM	**MPS Workshop - Building Resilience and Avoiding Burnout** Organiser: Hong Kong Medical Association; Medical Protection Society; Speaker: Dr. FUNG Shu Yan, Anthony; Venue: HKMA Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, HK	HKMA CME Department Tel: 2527 8285 3 CME Point
7:00 PM	**FMSHK Certificate Course on Complaint Management 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
20 WED 2:00 PM	**Course on Community Nephrology (Facebook CME Live)** Organiser: The Hong Kong Medical Association; Chairman: Dr. HO Chung Ping, MH, JP; Speaker: Dr. LEUNG Kay Tai, Franky; Venue: N/A	Mr. Jeff CHENG Tel: 2527 8285 1 CME Point
4:00 PM	**FMSHK Certificate Course on Communication and Swallowing Development and Disorders in Children 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
21 THU 1:00 PM	**HKMA Kowloon East Community Network - "How to Personalize the Treatment Approach for Patient with Diabetes?" cum Annual Meeting** Organiser: HKMA-Kowloon East Community Network; Chairman: Dr. AU Ka Kui, Gary; Speaker: Dr. TONG Chun Yip, Peter; Venue: V Cuisine, 6/F., Holiday Inn Express Hong Kong Kowloon East, 3 Tong Tak Street, Tseung Kwan O	Miss Antonia LEE Tel: 2527 8285 1 CME Point
7:00 PM	**FMSHK Certificate Course in Cardiology 2019** Organiser: HKMA-Kowloon East Community Network; Chairman: Dr. AU Ka Kui, Gary; Speaker: Dr. TONG Chun Yip, Peter; Venue: V Cuisine, 6/F., Holiday Inn Express Hong Kong Kowloon East, 3 Tong Tak Street, Tseung Kwan O	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
22 FRI 1:00 PM	**HKMA Yau Tsim Mong Community Network - Updates on Antiviral Treatment for Influenza** Organiser: HKMA Yau Tsim Mong Community Network; Chairman: Dr. CHAN Wai Keung, Ricky; Speaker: Dr. CHU Wai Sing, Daniel; Venue: Diamond Room, 5/F, The Cityview Hong Kong, 23 Waterloo Road, Kowloon	Ms. Candice TONG Tel: 2527 8285 1 CME Point
1:00 PM	**HKMA Shatin Doctors Network - Transforming Diabetes Care: Reducing CV Mortality in Patients with Type 2 Diabetes** Organiser: HKMA Shatin Doctors Network; Chairman: Dr. MAK Wing Kin; Speaker: Dr. CHEUNG Shing Him, Gary; Venue: Diamond Room, 2/F, Royal Park Hotel, 8 Pak Hok Ting Street, Shatin	Ms. Candice TONG Tel: 2527 8285 1 CME Point
7:00PM	**FMSHK Certificate Course on Mental Health 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345

Certificate Course for Health Care Professionals

● Course No. C338 ● CME/CNE Course

Certificate Course on

Best Practices in Quality of Life Evaluation and Assessments 2019

Jointly organised by

The Federation of Medical Societies of Hong Kong

World Association for Chinese Quality of Life

Objectives:

This course equips participants the know-how of evaluating and assessing quality of life (QoL) in both healthy and ill individuals. Since the development of an index for assessing quality of life in the 60's, the measurement of health-related quality of life has made a phenomenal impact on the evaluation of health care and medical interventions. Nowadays, numerous measures have been developed across a wide range of clinical areas, including but not limited to neurology, oncology, cardiology, and palliative care. The best use of these tools is hinged on a good understanding of their developmental framework, extent of evaluation, and use in practice. In response to this need, this course provides the necessities for healthcare professionals to choose, evaluate and conduct QoL assessment in practice.

(The World Association for Chinese Quality of Life (WACQOL) is a non-profit organization dedicated to the education and research of quality of life in the Chinese population. Please do learn more of us at http://wacqol.org)

Date	Topics	Speakers
14 Oct	Principles and Concepts of Quality of Life (QoL)	Dr Wendy Wong Assistant Professor, Hong Kong Institute of Integrative Medicine, School of Chinese Medicine The Chinese University of Hong Kong
21 Oct	Linguistic and Psychometric Evaluation of QoL Measures	Dr Daniel Fong Associate Professor, School of Nursing The University of Hong Kong
28 Oct	Using QoL in Health Evaluation	Dr Carlos Wong Assistant Professor (Research), Department of Family Medicine and Primary Care The University of Hong Kong
4 Nov	Assessing QoL in Palliative Care	Dr Raymond Lo Clinical Professor (Hon), Department of Medicine and Therapeutics The Chinese University of Hong Kong
11 Nov	Assessing QoL in Cancer Patients	Dr Winnie So Associate Professor, The Nethersole School of Nursing The Chinese University of Hong Kong
18 Nov	QoL in General Population	Prof Eliza Wong Professor, JC School of Public Health and Primary Care The Chinese University of Hong Kong

Dates : 14, 21, 28 October, 2019 and 4, 11, 18 November, 2019 (Every Monday)
Time : 7:00 pm – 8:30 pm
Venue : Lecture Hall, 4/F., Duke of Windsor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong
Language Media : Cantonese (Supplemented with English)
Course Fee : HK$750 (6 sessions)
Certificate : Awarded to participants with a minimum attendance of 70%
Enquiry : The Secretariat of The Federation of Medical Societies of Hong Kong
Tel: 2527 8898 Fax: 2865 0345 Email: info@fmshk.org

CME / CPD Accreditation in application
Application form can be downloaded from website: http://www.fmshk.org

Date / Time	Function	Enquiry / Remarks
24 SUN 12:00 PM	**HKMA Football Day** Organiser: The Hong Kong Medical Association; Chairman: Dr. CHAN Hau Ngai, Kingsley, Dr. IP Wing Yuk, Dr. YEUNG Hip Wo, Victor; Venue: La Salle College, 18 La Salle Rd, Kowloon Tsai, Hong Kong	Miss Sinn TANG Tel: 2527 8285
26 TUE 6:30 PM	**MPS Workshop – Mastering Shared Decision Making** Organiser: Hong Kong Medical Association; Medical Protection Society; Speaker: Dr. FUNG Shu Yan, Anthony; Venue: Maggie Room, Eaton Hotel	HKMA CME Department Tel: 2527 8285 3 CME Point
7:00 PM	**FMSHK Certificate Course on Complaint Management 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
27 WED 7:00 PM	**FMSHK Certificate Course on Communication and Swallowing Development and Disorders in Children 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
28 THU 1:00 PM	**HKMA Hong Kong East Community Network - Updates on Antiviral Treatment for Influenza** Organiser: HKMA Hong Kong East Community Network; Chairman: Dr. AU Chi Lap, Simon; Speaker: Dr. WONG King Ying; Venue: HKMA Wanchai Premises, 5/F, Duke of Windsor Social Service Building, 15 Hennessy Road, HK	Ms. Candice TONG Tel: 2527 8285 1 CME Point
7:00 PM	**FMSHK Executive Committee Meeting** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Council Chamber, 4/F, Duke of Windor Social Service Building, 15 Hennessy Road, Wanchai, Hong Kong	Ms. Nancy CHAN Tel: 2527 8898
7:00 PM	**FMSHK Certificate Course in Cardiology 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
29 FRI 7:00 PM	**FMSHK Certificate Course on Mental Health 2019** Organiser: The Federation of Medical Societies of Hong Kong; Venue: Lecture Hall, 4/F, Duke of Windsor Social Service Building, 15 Hennessy Road, Wan Chai, Hong Kong	The Secretariat of FMSHK Tel: 2527 8898 Fax: 2865 0345
30 SAT 2:30 PM	**MPS Workshop - Mastering Adverse Outcomes** Organiser: Hong Kong Medical Association; Medical Protection Society; Speaker: Dr. CHENG Ngai Shing, Justin; Venue: HKMA Central Premises, Dr. Li Shu Pui Professional Education Centre, 2/F, Chinese Club Building, 21-22 Connaught Road Central, HK	HKMA CME Department Tel: 2527 8285 3 CME Point

Upcoming Event

7 Apr 2019	**Federation Sports Day 2019 – Day 2** Organiser: The Federation of Medical Societies of Hong Kong Venue: Ying Wah College	Ms Sara CHEUNG Tel: 2527 8898 sara.cheung@fmshk.org

Answers to Dermatology Quiz

Answers:

1. Melanonychia
   The diagnosis is Melanonychia. The differential diagnoses include subungual haematoma, melanoma of nail unit and other pigmentation due to external sources such as pseudomonas infection, stained by KnMO4 or hair dye.

2. Melanonychia is more common in dark skinned individuals (Fitzpatrick type V and VI). It is due to deposition of melanin in the nail plate. It often arises from a pigmented melanocytic naevus or a lentigo. The exact pathogenesis of melanin deposition on nail plate is unknown. It may also be precipitated by trauma such as unsuitable footwear, endocrine diseases such as Addison's disease and Cushing syndrome, and hereditary disease such as Peutz-Jeghers syndrome, etc.

3. Melanonychia is most often benign. However, a band of brown/black pigment in a nail must be examined carefully paying close attention to any evidence of melanoma of nail unit such as rapidly widening of the pigmented band; heterogeneous pigmentation; extension of pigment to nailfold (Hutchison sign); distortion of nail plate and development of nodule or ulceration.

4. Melanonychia is a benign condition, for which no treatment is required. If evidence of melanoma is suspected, urgent biopsy is needed.

Dr Chi-keung KWAN
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Specialist in Dermatology & Venereology

MIRCERA®
methoxy polyethylene glycol-epoetin beta

Continuous activity. Targeted stability.

References:
1. Roger SD, Locatelli F, Woitas RP, *et al*. C.E.R.A. once every 4 weeks corrects anaemia and maintains haemoglobin in patients with chronic kidney disease not on dialysis. *Nephrol Dial Transplant*.2011;26(12):3980-3986. **2.** Carrera F, Lok CE, de Fransicso A, *et al*. Maintenance treatment of renal anaemia in haemodialysis patients with methoxy polyethylene glycol-epoetin beta versus darbepoetin alfa administered monthly: a randomized comparative trial. *Nephrol Dial Transplant*. 2010;25(12):4009-4017. **3.** MIRCERA® Hong Kong Prescribing Information. **4.** Klinger M, Arias M, Vargemezis V, *et al*. Efficacy of intravenous methoxy polyethylene glycol-epoetin beta administered every 2 weeks compared with epoetin administered 3 times weekly in patients treated by hemodialysis or peritoneal dialysis: a randomized trial. *Am J Kidney Dis*. 2007;50(6):989-1000. **5.** Saueressig U, Kwan JT, De Cock E, *et al*. Healthcare resource utilization for anemia management: current practice with erythropoiesis-stimulating agents and the impact of converting to once-monthly C.E.R.A. *Blood Purif*. 2008;26(6):537-546.

Abbreviated Prescribing Information - Mircera (methoxy polyethylene glycol-epoetin beta)
Indications: Treatment of anaemia associated with chronic kidney disease (CKD).
Dosage & administration: Can be administered subcutaneously or intravenously in order to increase haemoglobin(Hb) to not greater than 12g/dl (7.45mmol/l). Subcutaneous use is preferable in patients who are not receiving haemodialysis to avoid puncture of peripheral veins. Hb variability should be addressed through dose management, with consideration for the Hb target range of 10g/dl (6.12mmol/l) to 12g/dl (7.45mmol/l). A rise in Hb of greater than 2g/dl (1.24mmol/l) over a four-week period should be avoided. Recommend to monitor Hb level every 2 weeks until stabilized and periodically thereafter. Patients not currently treated with an ESA: 1.2 mcg/kg every month or 0.6 mcg/kg every 2 weeks in order to increase the Hb level to > 10 g/dl (6.21 mmol/l). May increase dose by approximately 25% of previous dose if Hb rise < 1.0 g/dl (0.621 mmol/l) over 1 month. Further increases of approximately 25% may be made at monthly intervals until the individual target Hb level is obtained. Patients treated once every two weeks whose Hb level is above 10 g/dl (6.21 mmol/l) may receive Mircera administered once monthly using the dose equal to twice the previous once every 2 weeks dose. Patients currently treated with an ESA: Patients currently treated with and ESA can be switched to Mircera administered once a month. Starting dose of Mircera is based on previous weekly dose of darbepoetin alfa or epoetin at the time of substitution. Start the first injection at the next scheduled dose of previously administered darbepoetin alfa or epoetin. Monthly Mircera dose is 120 mcg if the previous weekly dose of darbepoetin alfa or epoetin is < 40 mcg/wk or <8000 IU/wk respectively. Monthly Mircera dose is 200 mcg if the previous weekly dose of darbepoetin alfa or epoetin is 40-80 mcg/wk or 8000-16000 IU/wk respectively. Monthly Mircera dose is 360 mcg if the previous weekly dose of darbepoetin alfa or epoetin is > 80 mcg/wk or > 16000 IU/wk respectively. If dose adjustment is required to maintain the target Hb concentration above 10 g/dl (6.21 mmol/l), increase the monthly dose by approximately 25%. For both situations: If rate of rise in Hb is greater than 2 g/dl (1.24 mmol/l) in 1 month or if the Hb level is increasing and approaching 12 g/dl (7.45 mmol/l), reduce dose by approximately 25%. If Hb level continues to rise, interrupt therapy until Hb level begins to decrease, at which point therapy should be restarted at a dose approximately 25% below the previously administered does. Dose adjustments should not be made more frequently than once a month.
Contraindications: Patients with uncontrolled hypertension or known hypersensitivity to the active substance or to any of the excipients.
Warnings & Precautions: Evaluate iron status for all patients prior to and during treatment and administer supplementary iron therapy if necessary to ensure effective erythropoiesis. Consider diagnosis of Pure Red Cell Aplasia (PRCA) if all the possible causative factors excluded. Discontinue Mircera and do not switch to another ESA in case PRCA is diagnosed. PRCA caused by anti-erythropoietin antibodies has been reported in association with ESAs and these antibodies have been shown to cross-react with all ESAs. Epoetins are not approved in the management of anaemia associated with hepatitis C. Adequately control blood pressure in all patients before, at initiation of, and during treatment with Mircera. Consider dose reduction or withheld treatment if high blood pressure is difficult to control by drug treatment or dietary measures. Withdraw Mircera immediately and an alternative treatment considered if signs and symptoms of skin reactions appear. Discontinue Mircera if SCARs has developed and ESA must not be restarted. In patients with chronic kidney disease, maintenance Hb concentration should not exceed the upper limit of the target haemoglobin concentration. As with all growth factors, there is a concern that ESAs could stimulate the growth of any type of malignancy. Caution in patients with haemoglobinopathies, seizures or with platelet levels > 500 x 109/l. Misuse of Mircera may lead to an excessive increase in Hb. This may be associated with life-threatening cardiovascular complications.
Drug Interactions: No interaction studies have been performed. There is no evidence that MIRCERA alters the metabolism of other medicinal products.
Use in Pregnancy & Lactation: There are no adequate data from the use of Mircera in pregnant women and caution should be exercised when prescribing to pregnant women. It is unknown whether Mircera is excreted in human breast milk. Risk-benefit ratio should be considered when use in nursing mothers.
Undesirable effects: Common: hypertension. Uncommon: vascular access thrombosis, headache.Rare: hypersensitivity, hypertensive encephalopathy, rash (maculo-papular), hot flush.
Date of preparation: Dec 2017
Full prescribing information should be viewed prior to prescribing.

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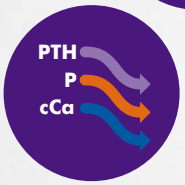
Parsabiv®
(etelcalcetide) Solution for injection

You control delivery.
Parsabiv® lowers all 3 sHPT* lab values^ with superiority over cinacalcet in PTH reduction.[1]

CONTROL
delivery with IV# administration[2]



LOWER
3 key secondary HPT lab values[1]

SUPERIORITY
achieve PTH reduction more vs. cinacalcet[1]

*sHPT = Secondary hyperparathyroidism ^PTH (parathyroid hormone), P (phosphate) & cCa (corrected calcium), #IV (intravenous)

Parsabiv® (etelcalcetide) Abbreviated Prescribing Information

Indications: Parsabiv is indicated for the treatment of secondary hyperparathyroidism (SHPT) in adult patients with chronic kidney disease (CKD) on haemodialysis therapy. **Posology and method of administration:** The recommended initial dose of etelcalcetide is 5 mg administered by bolus injection 3 times per week. Corrected serum calcium should be at or above the lower limit of the normal range prior to administration of first dose of Parsabiv, a dose increase, or reinitiation after a dose stop (see also dose adjustments based on serum calcium levels). Parsabiv should not be administered more frequently than 3 times per week. Dose titration: Parsabiv should be titrated so that doses are individualised between 2.5 mg and 15 mg. The dose may be increased in 2.5 mg or 5 mg increments no more frequently than every 4 weeks to a maximum dose of 15 mg 3 times per week to achieve the desired parathyroid hormone (PTH) target. Dose adjustments based on PTH levels: PTH should be measured after 4 weeks from initiation or dose adjustment of Parsabiv, and approximately every 1-3 months during maintenance. Dose adjustment may be necessary at any time during treatment including the maintenance phase. If PTH is below 100 pg/mL (10.6 pmol/L), the dose should be reduced or temporarily stopped. If PTH does not return to > 100 pg/mL following dose reduction, the dose should be stopped. For patients in whom the dose is stopped, Parsabiv should be reinitiated at a lower dose once PTH returns to > 150 pg/mL (15.9 pmol/L) and pre dialysis serum corrected calcium (cCa) ≥ 8.3 mg/dL (2.08 mmol/L). If the patient's last administered dose was 2.5 mg, Parsabiv may be reinitiated at the 2.5 mg dose level if PTH is > 300 pg/mL (31.8 pmol/L), and the most recent pre dialysis serum cCa ≥ 8.3 mg/dL (2.08 mmol/L). Dose adjustments based on serum calcium levels: Serum calcium should be measured within 1 week of initiation or dose adjustment of Parsabiv. Once the maintenance phase has been established for a patient, corrected serum calcium should be measured approximately every 4 weeks. In the studies total serum calcium was measured using Roche modular analysers. The lower limit of the normal range for corrected serum calcium was 8.3 mg/dL (2.08 mmol/L). Other laboratory assays may have different cut-offs for the lower limit of the normal range. In the event that clinically meaningful decreases in corrected serum calcium levels below the lower limit of the normal range occur and/or symptoms of hypocalcaemia occur, the following management is recommended: Corrected serum calcium value or clinical symptoms of hypocalcaemia*: < 8.3 mg/dL (2.08 mmol/L) and ≥ 7.5 mg/dL (1.88 mmol/L) Recommendations • If clinically indicated: - start or increase calcium supplements, calcium-containing phosphate binders, and/or vitamin D sterols. - increase dialysate calcium concentration. - consider reducing Parsabiv dose. Corrected serum calcium value or clinical symptoms of hypocalcaemia*: < 7.5 mg/dL (1.88 mmol/L) or symptoms of hypocalcaemia Recommendations • Stop Parsabiv until corrected serum calcium levels are ≥ 8.3 mg/dL (2.08mmol/L) and symptoms of hypocalcaemia (if present) have resolved. • If clinically indicated: - start or increase calcium supplements, calcium-containing phosphate binders, and/or vitamin D sterols. - increase dialysate calcium concentration. • Reinitiate Parsabiv at a dose 5 mg lower than the last administered dose. If patient's last administered dose was 2.5 mg or 5 mg, reinitiate at 2.5 mg once corrected serum calcium levels are ≥ 8.3 mg/dL (2.08 mmol/L) and symptoms of hypocalcaemia (if present) have resolved. * Total calcium was measured using Roche modular analyser. For albumin levels < 4.0 g/dL cCa (mg/dL) = Total Ca (mg/dL) + (4 - albumin[g/dL])*0.8. **Contraindications:** Hypersensitivity to the active substance or any of the excipients of the product. Parsabiv should not be initiated if corrected serum calcium is less than the lower limit of the normal range. **Special warnings and precautions for use:** Hypocalcaemia: Parsabiv treatment should not be initiated in patients if the corrected serum calcium is less than the lower limit of the normal range. Potential manifestations of hypocalcaemia include paraesthesias, myalgias, muscle spasm and seizures. Since etelcalcetide lowers serum calcium, patients should be advised to seek medical attention if they experience symptoms of hypocalcaemia and should be monitored for the occurrence of hypocalcaemia. Serum calcium levels should be measured prior to initiating treatment, within 1 week of initiation or dose adjustment of Parsabiv and every 4 weeks during treatment. If clinically meaningful decreases in corrected serum calcium levels occur, steps should be taken to increase serum calcium levels. Ventricular arrhythmia and QT prolongation secondary to hypocalcaemia: Decreases in serum calcium can prolong the QT interval, potentially resulting in ventricular arrhythmia. Serum calcium levels should be closely monitored in patients with congenital long QT syndrome, previous history of QT prolongation, family history of long QT syndrome or sudden cardiac death and other conditions that predispose to QT prolongation and ventricular arrhythmia while being treated with Parsabiv. Convulsions: The threshold for seizures may be lowered by significant reductions in serum calcium levels. Serum calcium levels should be closely monitored in patients with a history of a convulsion disorder while being treated with Parsabiv. Worsening heart failure: Decreased myocardial performance, hypotension, and congestive heart failure (CHF) may be associated with significant reductions in serum calcium levels. Serum calcium levels should be monitored in patients with a history of congestive heart failure while being treated with Parsabiv (see section 4.2), which may be associated with reductions in serum calcium levels. Co-administration with other medicinal products: Administer Parsabiv with caution in patients receiving any other medicinal products known to lower serum calcium. Closely monitor serum calcium. Patients receiving Parsabiv should not be given cinacalcet. Concurrent administration may result in severe hypocalcaemia. Adynamic bone: Adynamic bone may develop if PTH levels are chronically suppressed below 100 pg/mL. If PTH levels decrease below the recommended target range, the dose of vitamin D sterols and/or Parsabiv should be reduced or therapy discontinued. After discontinuation, therapy can be resumed at a lower dose to maintain PTH in the target range. Immunogenicity: In clinical studies, 7.1% of patients with SHPT treated with Parsabiv for up to 6 months tested positive for binding antibodies. 80.3% of these had pre-existing antibodies. No evidence of altered pharmacokinetic profile, clinical response or safety profile was associated with pre-existing or developing anti-etelcalcetide antibodies. Excipient with known effect: Parsabiv contains less than 1 mmol sodium per vial, i.e. essentially sodium-free. **Interaction with other medicinal products and other forms of interaction:** No interaction studies have been performed. Concurrent administration of other medicinal products known to reduce serum calcium and Parsabiv may result in an increased risk of hypocalcaemia. Patients receiving Parsabiv should not be given cinacalcet. **Fertility and lactation:** Pregnancy: There are no or limited amount of data from the use of etelcalcetide in pregnant women. Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity. As a precautionary measure, it is preferable to avoid the use of Parsabiv during pregnancy. Breast-feeding: It is unknown whether etelcalcetide is present in human milk. Available data in rats have shown that etelcalcetide is excreted in milk. A risk to breastfed newborns/infants cannot be excluded. A decision must be made whether to discontinue breast-feeding or discontinue/abstain from Parsabiv therapy taking into account the benefit of breast-feeding for the child and the benefit of therapy for the woman. **Undesirable effects: Incidence of adverse reactions from controlled clinical studies** Very common (≥ 1/10): Blood calcium decreased, muscle spasms, nausea, vomiting, diarrhoea, Common (≥ 1/100 to ≤ 1/10): Hypocalcaemia, hyperkalaemia, hypophosphataemia, QT prolongation, worsening heart failure, hypotension, headache, paraesthesia, myalgia. **Overdose:** Overdose of etelcalcetide may lead to hypocalcaemia with or without clinical symptoms and may require treatment. In the event of overdose, serum calcium should be checked and patients should be monitored for symptoms of hypocalcaemia and appropriate measures should be taken. Although Parsabiv is cleared by dialysis, haemodialysis has not been studied as a treatment for overdose. Single doses up to 60 mg and multiple doses up to 22.5 mg 3 times a week at the end of dialysis in patients receiving haemodialysis were safely administered in clinical trials.

Reference: 1.Block GA, Bushinsky DA, Cheng S, et al. JAMA. 2017;317:156-164. 2.Parsabiv, Hong Kong Prescribing Information, Feb 2017.

Abbreviated Prescribing Information Version: Parsabiv HKPI HKPARPI01
Please read the full prescribing information prior to administration and full prescribing information is available on request.
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