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Editorial

Diabetic kidney disease (DKD) is one of the most common complications in diabetes and is the leading cause of end-stage renal disease (ESRD). Optimal management of DKD requires team-based approaches with multidisciplinary expertise and involvement from diabetologists, nephrologists, diabetes nurses, renal nurses and dietitians at various times during the program. Our theme of this newsletter focuses on sharing the management of people with DKD from diabetes nurses, renal nurse and dietitian. From their sharing, it gives us the practical tips in managing diabetes patients in our practices.

Sharing on the program of management of Diabetic Kidney Disease in PYNEH

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Diabetic Kidney Disease (DKD) is the leading cause of end stage renal disease in western countries[1]. The number of patients suffering from chronic kidney disease (CKD) is ever increasing in Hong Kong[2].
From the data of Hong Kong, new patients suffering from diabetic nephropathy who required Renal Replacement Therapy (RRT) increased from 26.2% in 1996 to 49.6% in 2013[2]. Hypertension is found in about one-third of patients with diabetes at the time of diagnosis and hastens the development of DKD [1].

		Albuminuria stage		
Kidney function stage	GER (mL/min/1.73m²)	Normal (urine ACR mg/mmol) Male:<2.5 Female: <3.5	Microalbuminuria (urine ACR mg/mmol) Male:2.5 - 25 Female: 3.5-35	Macroalbuminuria (urine ACR mg/mmol) Male:>25 Female:>35
1	≥90	Not CKD unless haematuria, structural or pathological abnormalities present		
2	60 - 89			
3a	45 - 59			
3b	30 - 44			
4	15 - 29			
5	<15 or on dialysis			

Diagnosis, classification and staging of chronic kidney disease. Kidney Health Australia CARI Guidelines, 2012.

The introduction of a new classification system for chronic kidney disease (CKD) in 2012, irrespective of cause, and increasing awareness of the widening spectrum of CKD presentations in people with diabetes, beyond the traditional proteinuria-centered model, have promoted the use of the term DKD[1]. CKD is defined on the basis of an estimated or measured glomerular filtration rate (GFR) < 60ml/min/1.73m² and/or evidence of kidney damage (albuminuria, proteinuria, hematuria after exclusion of urological causes, or structural abnormalities on kidney imaging tests) on at least 2 occasions for a period of at least 3 months, irrespective of the underlying cause. (CARI 2012)[6]

Patients at earlier stages of CKD may be largely asymptomatic and be less aware of issues regarding complications and disease progression[3]. Current guidelines for early CKD management suggest early education focusing on the management of risk factors and complications to delay progression and information tailored to the stage of CKD to allow patients to make informed decisions[3]. Early detection and management of renal disease is important to reduce the burden of end-stage renal failure requiring renal replacement therapy (RRT)[5]. Moreover, people with DKD are not only at significant risk of progression to End Stage Renal Disease, there is also a concomitant increase in cardiovascular morbidity and mortality, associated with frequent hospitalizations and dialysis, events that considerably increase healthcare costs [4].

Patients' active participation in their own care is critical. However, it may be limited by their lack of awareness and understanding of CKD. 9 studies showed empowerment program improving outcomes for quality of life, knowledge and self-management; 9 had improved clinical end points; and 2 studies showed improvements in both patient-reported and clinical outcomes. Well-designed, interactive, frequent and multifaceted

educational interventions that include both individual and group participation may improve knowledge, self-management, and patient outcomes[3].

Non-adherence to the treatment regimen is considered as the major cause of the poor glycemic control and resultant complications often seen in patients with diabetes. Literature studies suggest that multidisciplinary management of chronic conditions can improve patients' adherence to treatment and improve health related outcomes[4].

A multidisciplinary empowerment program for patient with DKD was implemented in Hong Kong East Cluster, collaborating with diabetic and renal team in March 2017.

Program objectives:

1. To closely monitor patient' s diabetic control, blood pressure control and renal function
2. To offer a structured comprehensive care to diabetic patients with CKD stage 3
3. To offer early treatment intervention for delaying the progression of kidney disease

Methods:

This pilot program was implemented in PYNEH in March 2017. Diabetic patients aged 18 to 70, at CKD stage 3 and was not already followed up by the Renal Team were recruited. They attended an empowerment talk conducted by a team comprising nephrologist, renal nurse, diabetes nurse, dietitian and social worker. Patients aged 18 to 60 (category 1) were arranged to be followed up by endocrinologists and diabetes nurse periodically for 52 weeks. Patients aged 61 to 70 (category 2) attended subsequent Diabetes Nurse Clinic in weeks 24 and 52. Throughout the process, renal function, body mass index (BMI), diabetes and blood pressure control were closely monitored. Data was collected using patients' medical records, self-care knowledge questionnaire and satisfactory survey.

Care process:

Visit 1 Empowerment Talk

Aimed to empower of healthy lifestyle for behavior modification with the content of:

- Brief introduction on CKD process and its management
- Blood pressure control and its management
- Diabetes management
- Diet education
- Experience sharing of potential diabetic complications











Intervention by multidisciplinary team:

1. Medical consultation:

- Assess and manage Diabetes and renal status. Intensify treatment if required.
- Refer to Renal clinic and Renal nurse if eGFR < 30 ml/min
- Summarize the progression of CKD in past one year at V8

2. Diabetes Nurse:

- DM education, assessment and outcome monitoring
- Refer smoking cession if required
- Refer Dietitian for low Na, K diet, low purine diet and low protein diet if required
- Refer Medical consultation if required

3. Renal nurse:

Further management of patients with high serum potassium & phosphate in Renal Nurse Clinic

Patient journey for category 1

V1	V2	V3	V4	V5	V6	V7	V8	V9
Wk 0	Wk 8	Wk 16	Wk 24	Wk 32	Wk 40	Wk 48	Wk 56	~Wk 60-68
Empowerment Talk								Empowerment Talk

Patient journey for category 2

V1	V2	V3
Wk 0	Wk 32	~Wk 60-68
Empowerment Talk		Empowerment Talk

Results:

173 patients were recruited in 2017. Data of 8 patients (category 1) and 52 patients (category 2) were analyzed. HbA1c decreased significantly from mean 8.25 % to 7.05 % ($p < 0.009$) for category 1 and 7.8 % to 7.4 % ($p < 0.145$) for category 2. In both categories, no deterioration was found in the BMI and blood pressure, as were their renal status in terms of serum creatinine and eGFR, indicating that renal function was maintained.

1. Metabolic outcome:

Category 1:

Diagnosis of DM				mean: 8.25years
Sex	Male: 87%(7)	Female: 13%(1)		
Marital statues	Single: 13%(1)	Married: 87%(7)		
Family history of DM	Nil: 50%(4)	Parents: 37%(3)	Sibling: 13%(1)	
Educational level	Primary: 37%(3)	Secondary: 37%(3)	Tertiary: 13%(1)	
Employment statues	Full time: 36%(3)	Part time: 13%(1)	Housewife: 13%(1)	Retired: 25%(2)
	Unemployment: 13%(1)			
Smoking	No: 50%(4)	Ex-smoker: 50%(4)		
Alcohol	No: 62%(5)	Social-drinker: 25%(2)	Ex-drinker: 13%(1)	
DM regimen	OAD: 87%(7)	OAD+insulin: 13%(1)		
Attend DM education	Yes: 75%(6)	No: 25%(2)		

mean	V1	V8 (post 56 weeks)
HbA1c	8.3	7.1
eGFR	47.3	49.9
Cr	134	130
Albumin	42.4	41.1
ACR	94.1	121.8
TC	4.33	4.36
LDL	2.43	2.43
HDL	0.98	1.01
TG	2.01	2.046

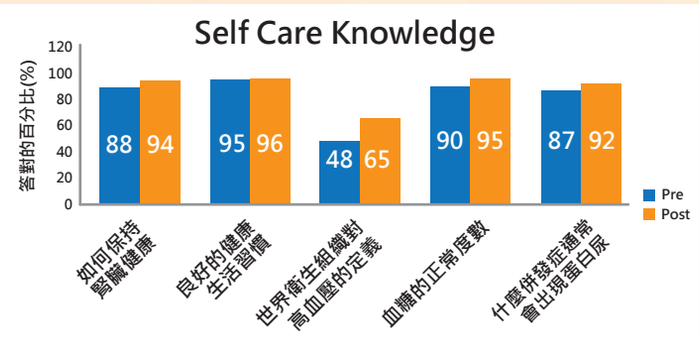
mean	V1	V8 (post 56 weeks)
SBP	138	130
DBP	81	78
BMI	29.3	29.3
W/H ratio	0.99	1.00
No. of OAD used	1 item=1 2 items=3 3 items=4 4 items=0	1 item=2 2 items=3 3 items=2 4 items=1
Daily insulin dosage/unit	4.5	14
Refer to Rental Clinic	Nil	

Category 2:

mean	V1	V8 (post 56 weeks)
HbA1c	7.8	7.4
eGFR	45	43
Cr	128	135
Albumin	39.4	39.1
ACR	45	55
TC	3.8	4.0
LDL	2.05	2.08
HDL	1.02	1.06
TG	1.71	1.86

mean	V1	V8 (post 56 weeks)
SBP	137	136
DBP	70	67
BMI	27.8	27.9
W/H ratio	0.98	0.97
No. of OAD used	Nil=3 1 item=20 2 items=19 3 items=7 4 items=3	Nil=2 1 item=16 2 items=24 3 items=8 4 items=2
Daily insulin dosage/unit	39.8	45.8
Refer to Rental Clinic	10.4%(5)	

2. Self-care knowledge questionnaire: showed increase understanding of DKD and knowledge of self-management.



3. Patient Satisfactory Survey: showed average 4.5 out of total 5 marks

Some patients even wrote down valuable comments:

- 希望日後見醫生時,醫生能主動向病者說出:
  你腎功能還有90/60/30/10分.這樣病者會有危機感,
  從而能跟進, Thanks.
- 多謝醫生和護士抽出時間關心疾病,感激多謝.
- 認識鉀, 認識磷, 好好啦, 滿意!

Discussion:

As this was a pilot program, the teams worked under tight manpower without addition resources. The program required large manpower involvement. We found that the coordination of both Endocrine Team and Renal Team schedule was also difficult. We appreciate the enthusiasm of the multidisciplinary team to provide such care for DKD patients.

As there is currently lack of structured programme to delay progression of DKD for stages 3b & 4, the need to provide early intervention which embraces collaboration between Diabetes and Renal care and development of service model for DKD is a priority. In addition, empowerment to patients for understanding DKD care will be of importance in the way forward.

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Experience of running a Team-based and Empowered Care Programme for Diabetes Patients with Diabetes Kidney Disease (DKD)

Loo Kit Man

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Introduction

In Hong Kong, diabetes mellitus accounts for up to half of incident cases of renal replacement therapy[1]. Various studies have showed that control of blood pressure[2], blood glucose[3] and blood lipids[4] as well as inhibition of the renin angiotensin system (RAS) is effective reduces albuminuria[5], slows rate of decline in renal function[6] and reduces risk of CVD and end stage renal disease (ESRD)[7,8]. From the CUHK experience, using a team approach, augmented by care protocols with periodic reminders was able to substantially increase the rate of attaining multiple treatment targets and reduce the risk of major endpoints including CVD, ESRD and death in these high risk subjects[9-11]. In 2007, Asia Diabetes Foundation, CUHK, designed a web based internet program Joint Asia Diabetes Evaluation (JADE) incorporating templates for data collection, validated risk engines and decision support to enable doctors to establish diabetes registry for quality assurance and ongoing evaluation. On the other hand, the patient report which displays individualized risk profile, trends of risk factor control with decision support has also reduced clinical inertia and empowered patients with better self-care.

A randomized translational study was initiated by Professor Juliana CN Chan in 2015. The study aimed at comparing the effects of usual care (UC) versus empowered care (EC) versus team-based, empowered care (TEC) on risk factor control and clinical outcomes in patients with DKD in Asian countries. In the Diabetes &

Endocrine Centre, Prince of Wales Hospital, three hundred diabetes patients with Chronic Kidney Disease (CKD) Staging 3 with estimated Glomerular Filtration Rate (eGFR) 30 to 59 ml/ min/1.73 m^2 and 4 with eGFR 15 to 29 ml/ min/1.73 m^2 were recruited and randomized into UC, ED and TEC at the diabetes complication assessment sessions. The objectives were to use the JADE programme to set up a diabetic kidney disease (DKD) registry and risk stratification; also to feedback, recommendations and decision support to empower doctors and patients to make informed decisions. Moreover, we used a team approach augmented by the JADE program to treat to multiple targets and reduce all diabetes related clinical outcomes.

Team-based and empowered Care (TEC)

Patients randomized to the TEC group were followed by a doctor-nurse team at least 3 monthly to achieve multiple targets recommended as A1c<7%, BP<130/80 mmHg, LDL-C<1.8 mmol/l, triglyceride<1.7 mmol/l and persistence with RAS inhibitors, but tailored to patients' risk profile. The patients were also be given a JADE follow up report 3-monthly and returned at the 12th month for repeat diabetes complication screening (DCS).

Between October 2014 and December 2015, 90 patients with CKD staging 3 or 4 were recruited. In groups of ten, patients attended three 2-hour workshops followed by endocrinologist consultation at quarterly interval over 1-year intervention period. The workshop designed jointly by diabetes nurses, renal nurses, dietitians aimed at empowering patients to understand their clinical conditions and risk factors contributing to DKD, interpretation of own metabolic and renal parameters, drugs to be avoided and alert to some specific renal precautions. Dietitians provided talks on the principles of renal diet. Sharing was given by patients on renal replacement therapy. Diabetes nurses facilitated peer sharing and discussion on self-management on different treatment modalities as well as goal setting. DKD handbooks were distributed to reinforce self-management and renal precautions. Patients also received nurse phone reminders and periodic JADE reports showing the progress and trends of HbA1c, lipids and blood pressure for interim empowerment.

Results

Upon completion of the programme after one year, HbA1c was lowered compared with baseline (formal results would be released in the due course). Patients rated a mean score of 5 out of 5 on improvement in knowledge on DKD management and they showed appreciation on group discussion and sharing with a mean score of 4.97 out of 5. Among self-care behaviors, drug compliance, blood glucose monitoring and dietary control adherence were improved with self-rated score of 4.96, 4.89 and 4.86 out of 5 respectively.

Reflection from this programme

Apart from educating patients on the importance of metabolic target optimization (ABC namely HbA1c, Blood Pressure, LDL-C Cholesterol), we believe that the use of measurable and quantifiable eGFR and urine albuminuria results are also powerful in empowering the patients to be aware of own healthcare risks especially as chronic DM complications tend to present so silently. Renal result parameters also reflect the possibility of other co-existing DM complications. This information supports and engages the patients to make better decision making on self-management, hopefully resulting in more successful outcomes.

The positive result and experience gained from the study have inspired us to create a Post DCS DKD reinforcement programme since 2017. All patients aged <75 would be arranged to either a general or DKD class 6 to 8 weeks after DCS based on patients' GFR levels. Should the patient' s GFR be < 60 mL/ min/1.73 m^2 , a DKD class will be arranged or otherwise in general class. Post DCS reinforcement class is a 2-hr interactive programme in which patients receive their own DCS reports and a Chinese DCS handbook. Patients are educated on treatment targets, signs and symptoms of various chronic diabetes complications and self-management strategies whereas DKD class focuses more on DKD self-care management.

We hope that patient empowerment programme would provide more information to empower the patients to adopt positive manners, strategies and lifestyle modifications so as to prevent and retard the progression of DKD and other diabetes complications in a positive manner.

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Sharing on the program of management of DM nephropathy in Yan Chai Hospital

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1. Background

DM nephropathy education program in Yan Chai Hospital (YCH) was first commenced in July 2016. Diabetic patients with deteriorating chronic kidney disease (CKD) (Cr >150) would be invited to join the program during Metabolic Risk Assessment (MRA). The program would provide the MRA report and talk on DM nephropathy care (REC) conducted by DM nurses.

In June 2018, we enhanced our service to the patients with late stage of CKD (stages 3b and 4) in collaboration with renal nurses. The lecture content was revised to meet their needs and were conducted by joint DM and renal nurses.

2. Aims of the program

- To provide patient with information on their control parameters, especially on the CKD stages
- To educate patient on the management of DM nephropathy to retard the progress of End Stage Renal Disease (ESRD)
- To provide information on the management of the ESRF in YCH.

3. Program content

Diabetic patients with Cr 150- 500, aged 18- 75 and who were not under follow up by renal team were invited to participate in the program during their MRA visit.

Patients attended a one-hour education lecture conducted by DM and renal nurses. The updated MRA report was provided with focus discussion on blood pressure, HbA1c, renal function, urine albumin and the CKD stages. Topics on lifestyle changes and precautions regarding the kidney problem, and renal replacement management in YCH were mentioned. During the lecture, patients were invited to complete a knowledge test (pre-post) and satisfactory survey. They were arranged to come for reviewing their progress 1 year later.

For those with suboptimal glycemic control, subsequent follow up assessment would be arranged by DM nurse. Renal nurses would arrange an early appointment for those patients with serum creatinine ≥300 umol/L to be followed up by the Nephrologist.

4. Major findings and comments on the progress

72 patients were recruited into the program during the period of 7/2016- 8/2018. Excluding those deceased after the program, proceeded to dialysis or no more follow up at YCH, a total of 62 patients' data were analyzed.

Basic demographic information

Of the 62 participants, 14 were female and 48 were male. 46 patients attended the DM nephropathy education (REC group) and 16 defaulted (control group).
28 patients belonged to CKD stage 3b, 30 patients with CKD stage 4 and 4 patients belonged to CKD stage 5.

Comparison of average HbA1c

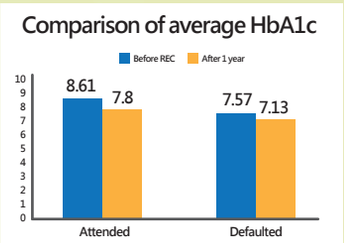


Fig 1. Comparison of average HbA1c between REC group and control group

The average HbA1c decreased from 8.6% to 7.8% for patients who attended the REC classes. The result was statistically significant ($p<0.05$) (Fig 1). The greater improvement of HbA1c in REC group than control group may due to the subsequent follow up by DM nurses.

Comparison of average eGFR

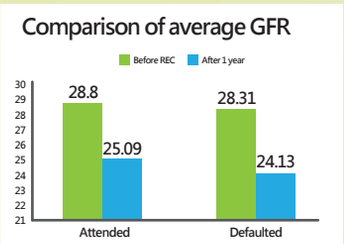


Fig 2 Comparison of average eGFR between REC group and control group

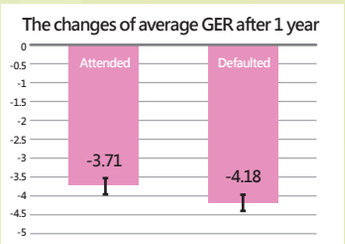


Fig 3. The changes of average eGFR between REC group and control group

The average eGFR dropped from 28.8 to 25.1 for those who attended the REC classes compared with defaulted group 28.3 to 24.1 after 1 year (Fig 2). There was slightly less deterioration of average eGFR in the REC group -3.71 versus control group -4.18 (Fig 3).

Patient satisfaction and knowledge

Patients showed high satisfy (96.8%) with the overall program. They had also showed improved knowledge on DM nephropathy care (pre-education 59% and post-education 87%).

5. Future Development

The landmark studies of UKPDS & DCCT showed intensive glycemic control with 33% and 45% of risk reduction in microalbuminuria of T2DM and T1DM patients respectively. Early detection and treatment of diabetic nephropathy could retard the progression to end stage renal disease (ESRD).

To address the above, apart from providing education to those with late CKD stages, we planned to expand our program to those with earlier CKD stages.

Management of DKD under Renal Team perspective

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Chronic kidney disease (CKD) is a worldwide public health problem that affects millions of people from all racial and ethnic group and is ever increasing[1]. Diabetic Kidney Disease (DKD) is the leading cause of end stage renal disease. In Hong Kong, new patients suffering from diabetic nephropathy (DN) requiring renal replacement therapy (RRT) increased from 26.2% in 1996 to 52 % in 2018[1] . People with DKD are not only at significant risk of progression to end stage renal disease (ESRD), there is also a concomitant increase in cardiovascular morbidity and mortality, associated with frequent hospitalizations and dialysis, events that considerably increase healthcare costs and compromised health related quality of life[4].

The terms DN and DKD are often used interchangeably. DN is the classic term used for disease caused by hyperglycemia affecting the glomerulus[3]. DKD can be thought of as a more generic and widely recognized that extra-glomerular lesions are seen in DKD, particularly tubulointerstitial lesions such as tubular atrophy, interstitial inflammation and tubulointerstitial fibrosis. Moreover, DKD involves the presence of the triad of albuminuria, hypertension and declining renal function in people with diabetes.

Early detection and prompt management of DKD and associated cardiovascular risk factors such as hypertension and obesity are essentials to limiting the progression of DKD and consequently reducing the burden of ESRD requiring RRT[3]. The strategies involve controlling blood pressure, glycaemia and lipids to improve patient outcomes such as functional status, quality of life and adherence to treatment, and preventing the progression of the disease and the occurrence of cardiovascular complications.

Intensive treatment of hyperglycemia prevents albuminuria or delays its progression. KDOQI Diabetes Guidelines (2012) recommend a target hemoglobin A1c (HbA1c) of ~ 7 % to prevent or delay progression of the microvascular complications of DKD and suggest the target HbA1c be extended > 7 % in individuals with co-morbidities or limited life expectancy and risk of hypoglycemia. A strategy of more intense initial control in younger patients with less severe DKD and more relaxed control for patients in ESRD may be practical and effective[2].

Hypertension is found in about one-third of patients with diabetes at the time of diagnosis and hastens the development of DKD[2]. KDOQI Diabetes Guidelines (2012) suggest the target blood pressure of 140/90 in diabetes with a lower target of 130/80 in the presence of DKD. Using medication of ACE-I or an ARB is both renoprotective and effective treatment for DKD, lowering blood pressure and also reduce urinary albumin excretion. However, it is important to monitor for hyperkalaemia.

Obesity is related to T2D and is an independent risk factor for CKD leading to focal segmental glomerulosclerosis. Weight loss is associated with a reduction in proteinuria. Also, smoking is an important modifiable and independent risk factor for cardiovascular disease[2]. Therefore, patients should be offered smoking cessation advice and have access to smoking cessation clinics.

Diet compliance is important for delaying kidney disease. Low protein diets will reduce the protein burden on kidneys leading to reduce proteinuria and improve GFR[2]. Patients with DKD may require low salt and potassium diets. Low salt diets (<5 g sodium chloride/day) have been shown to reduce blood pressure[2].

Despite pharmacologic advances and disease management strategies, DKD remains associated with high morbidity and mortality[2]. Non-adherence to treatment regimen is considered to be a cause of the poor glycemic control and resultant complications seen in patients with diabetes. Patients with earlier stages of CKD may be largely asymptomatic and less aware of issues regarding complications and disease progression[3]. A lack of disease knowledge and awareness of the risk for progression of the renal disease and its connection with diabetes may affect the individual' s self-management and understanding of long-term consequences[4]. Additional measures including patient education, training in self-management and lifestyle modification coaching are important. Also, patients are expected to manage a wide range of daily self-care activities including monitoring of blood glucose levels, adjusting nutrition, engaging in physical activity, adhering to medication regimens, recognizing symptoms of deterioration in status and responding accordingly, and to reduce their risk of complications and adjust psychologically to their treatment and lifestyle changes. They are unable to suitably interpret the multitude of instructions received from various health care professionals and to process the complexity of the treatment regimens. These challenges create barriers for adherence. Management of DKD by establishing a multidisciplinary team including endocrinologist, nephrologist, clinical nurse specialist, dietitian, pharmacist and podiatrist can improve patients' adherence to treatment and health related outcomes[3].

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Dietary advice for patients with diabetic kidney disease

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Dietitian, PYNEH

Nutritional intervention is an essential aspect in the management of diabetic kidney disease with potential for slowing down the disease progression through optimization of glycemic, serum lipid, proteinuria and blood pressure control. It also aims for provision of a palatable and attractive diet, prevention of protein-energy malnutrition, as well as, management of edema, hyperkalemia, hyperphosphatemia and anemia.

Kidney Disease Improving Global Outcomes (KDIGO) Evaluation and Management of Chronic Kidney Disease Guidelines recommend to avoid > 1.3g protein/kg body weight/day in adults with chronic kidney disease at risk of progression and reduce to 0.8g/kg body weight/day in adults with Glomerular Filtration Rate < 30ml/min/1.73m^2 to reduce accumulation of metabolic waste products with potential amelioration of kidney function decline. Adequate energy intake is required for sparing protein for tissue protein synthesis and to attain or maintain ideal body weight. However, excessive intake of calorie leads to overweight that worsens glycemic and blood pressure control. Choosing food high in fibre (such as whole grain cereals, beans, nuts, fruits and vegetables) and low in glycemic index helps improving glycemic control. People with diabetes should have individualized meal plans with tailor-made carbohydrate distribution matching with their serum glucose control and nutritional needs. Twenty-five to thirty grams of fibre a day is recommended to help control of serum lipids and glucose. To achieve this recommendation, people should have 2 servings of fruits and 3 servings of vegetables a day, and choose high fibre cereals. Fat is a good source of energy and enhances flavor of food. In cases of hyperlipidemia, saturated fat intake should be limited to < 5-6% of total energy and trans fat intake should be minimal.

Excessive intake of sodium affects anti-proteinuric effect of angiotensin-converting enzyme inhibitors, as well as, control of proteinuria, hypertension and edema. It recommends limiting sodium intake to < 2g per day (equivalent to 1 teaspoon salt per day). Hong Kong Adult Dietary Survey 1995/96 showed that Chinese people aged 25-74 years had > 3.7g sodium a day, nearly twice of the recommendation. Sodium-containing seasonings and preserved food should be limited. Natural seasonings (such as ginger, garlic, pepper, onion and etc) may be used to enhance flavor of food.

As renal function declines, people with with diabetic kidney disease may have problems of hyperkalemia and hyperphosphatemia, and requires control intake of dietary potassium and phosphorus. High potassium foods include tea, coffee, soup, beans, nuts, dairy products, fruits, vegetables, mushrooms and low sodium salt. Low potassium fruits and vegetables should be chosen to maintain a low potassium balanced diet. Vegetables should be soaked and boiled to reduce their potassium content. High phosphorus foods include organ meat, meat and bone soup, dairy products, beans, nuts, chocolate, whole grain cereals and processed food with phosphorus food additives. Phosphorus additives are widely used in pre-packed foods. Ingredient lists in food label of pre-packed foods should be checked to find out whether they contain phosphorus additives. Due to poorer absorption of phosphorus in plant-based food compared with animal-based one, soy bean and its products as protein sources and whole grain cereals are allowed for persons with hyperphosphatemia.

Alcohol consumption is recommended to limit to no more than 2 servings per day for male and 1 serving for female for control of blood pressure. One serving is equivalent to 360ml beer, 150ml white or red wine, or 45ml whisky.

Adequate fluid intake is important to maintain kidney function but it should be restricted in case of edema. People with edema should restrict intake of sodium, fluid and high water content food, such as congee and oatmeal, to avoid accumulation of excessive fluid.

1,25-dihydroxyvitamin D3 and iron supplement may be required for the treatment of secondary hyperparathyroidism and anemia respectively. People with anemia should avoid drinking tea with meals as tannins in tea affect iron absorption. They also should not have iron supplement with tea and milk (calcium in milk may affect iron absorption). Vitamin C is excreted by kidney. Excessive intake of vitamin C leads to increased blood oxalate level, deposition of oxalate in heart, kidney and blood vessels, as well as precipitation of acute pseudogout. Vitamin A is also excreted by kidney and excessive intake leads to toxicity. People with with chronic kidney disease should not have over-the-counter supplement without consultation with health professionals. Star fruit should be avoided due to its neurotoxicity effects.

References:
1. Centre for Health Protection. Non-communicable Disease Watch. February 2013.
2. International Society of Nephrology. Kidney Disease Improving Global Outcomes Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. January 2013.
3. Byham-Gray L, Stover J, Wilesen K. A clinical guide to nutrition care in kidney disease 2nd edition. 2013.

Diabetes Kidney Disease: an unheard alarming clock

So Tak Yee Tammy
FHKAN(Medicine-Diabetes)

Introduction

Diabetes is both a community and personal health disaster if not diagnosed, treated, or managed properly. Diabetes leads to 53% renal replacement therapy in Hong Kong, which is a costly and suffering endpoint. Local data show 3-10% of DM patients die or reach endpoints yearly. An early approach, patient awareness, and management would control the deterioration. As such, patient empowerment would not just focus on disease self-care management, but also include more in-depth aspects to promote health literacy for a better outcome.

Objectives

1. Correlate diabetes patient' s awareness and perception of own kidney function to real health status
2. Identify health risk behaviors being conducted on Diabetes Kidney Disease (DKD) group
3. Results to draw the awareness and partnership of patients and health care professionals (HCP) to address kidney status early

Methodology

A cross-sectional survey was conducted in October of 2018 in an HA diabetes patient support group. The study for diabetes participants included three aspects: [1] perceived own kidney status including eGFR stage; [2] health behavior: recent use of OTC drugs, the habit of self-monitoring; [3] whether the HCP have discussed the kidney status during follow-up. The analysis was done to see any discrepancy in the perceived and real kidney function status.

Result and Impact

A total of 109 surveys were collected, 45 male, 64 female diabetes patients; the mean age was 66-year-old (43-84). The majority were type 2 diabetes (95%); 66% has >10 years of diabetes, followed by 5-10 years (17%) and <5 years (17%) of history. 78% of them had follow up in SOPC while 22% in GOPC. 56% were insulin-treated, of whom more than 1/3 were on multiple-dose of insulin therapy (MDI) with mean HbA1c 7.91% (5.4-14.3% +/-1.57).

For the correlation of the self-perceived kidney eGFR stages: 51% of the overall patients mis-perceived self-kidney stages. For Stage 2, mild Chronic Kidney Disease (CKD) group (eGFR 60-89ml/min/1.73m^2): up to 60% (28/47) overestimated own kidney function as in normal stage. For Stage 3 to 5 groups (medically defined as moderate to end-stage CKD if eGFR <60ml/min/1.73m^2): up to 48% of patients overestimated their own CKD stage as normal /mild deterioration.

Overall, 51% of these patients claimed that no HCP mentioned their kidney health status in the recent two follow-ups. On the other hand, 42% with CKD Stage 3 to 5, said that no HCP discussed with them their kidney problems.

About health monitoring, for the CKD stage 3 to 5 groups (eGFR <60 ml/min/1.73m^2), 38% did not have home blood pressure habit and 14% had no self-blood glucose monitoring at home. 24% of diabetes patients with the DKD Stage 3 to 5 reported that they had taken over-the-counter drugs in the past three months, which might further worsen their kidney function.

Reflection and Conclusion

Results showed the common problem of patients being unaware and having overestimated their kidney function. Besides, discussion of the kidney status was likely not a routine practice for HCP.

People don' t act because they don' t know; as a result, their related health risk behavior might not change. This unheard DKD alarming clock and costly endpoints could be handled at an early stage if all stakeholders have effective communication, engage, and work in partnership proactively.

As a professional nursing association, an initiative and changes could be made to set for a 5-year strategic plan to enhance patient' s health awareness on diabetes care. Members could also work it out bit by bit to make positive changes for the life of people with diabetes.

Activities: June to November 2019

Education Seminar & Training

The 11th AHKDN Annual Symposium & Annual General Meeting was held on 22nd June 2019
Eye on Eyes守望雙目

- The 11th AHKDN Annual Symposium



Keynote Speech (1)
Speaker: Dr. Chan Wai Man
Topic: Diabetic Retinopathy and Diabetic Macula Edema



Keynote Speech (2)
Speaker: Dr. Cheng Chi On, Andy
Topic: Diabetic Related Cataract, Glaucoma and other Ocular Complications

- AHKDN council committee



- The 11th AHKDN Annual General Meeting





Endocrinology, Diabetes and Metabolism Hong Kong (EDM HK) 2019, 2nd Annual Meeting
26th – 27th October 2019



Overseas education conference sponsorship

International Diabetes Federation Congress
2 – 6th December 2019





Education and Social Gathering

中山市中医院交流会

16th – 17th November 2019







Community Activities

East Meets West 2019 Lay program

28th September 2019







YDA Patient Congress

9th November 2019



Walk for Diabetes 2019

10th November 2019





Patient Education Tools

Patient Education Animated Video

糖尿病與併發症 糖尿腎篇
https://youtu.be/FGa2qFWEI7w

糖尿病與併發症 了解糖尿病
https://youtu.be/Qsn4O-atlro





Diabetes Centre Round

Diabetes Services at Tung Wah Hospital

Chan Mei Mau Ada, Advanced Practice Nurse, TWH

Our Diabetes Nurse Services started its services in 2003. It is situated in an integrated Day Care Centre on the 9th floor of Centenary Building in Tung Wah Hospital. We adopt multidisciplinary team approach to care for our diabetes patients. In 2014, a specialist-led Diabetes Clinic and Bone Health Clinic were established. Since then, we have expanded our services to support operational need.

TWH was accredited as a Center for Higher Physician Training in Diabetes from the Hong Kong College of Physicians in November, 2018.

Our services include:

A) DM Services

We provide comprehensive diabetes education for all in-patients of TWH. Other than providing individualized self-care education to patients and their carers, we also help to facilitate early discharge by monitoring profiles and perform dosage adjustment upon discharge with the support of Endocrinologist.

Since 2015, pre-clinic nursing assessment has been introduced to all new diabetes patients in DM clinic, through which complication screening is done to document the severity of their disease so that a comprehensive long-term treatment plan can be formulated upon their first physician consultation.

Other than DM Clinic, we also provide services to all medical patients followed up in TWH SOPD. Services include complication screening, DM self-management education as well as dosage adjustment under close supervision by Endocrinologist. Certain dynamic blood tests such as Glucagon Stimulation Test, Short Synacthen Test & Prolactin Test can also been performed in our unit.

B) Bone Health Services

A Bone Health Clinic was established in 2014 as a tertiary referral clinic for management of osteoporosis and other metabolic bone diseases at TWH. In 2015, TWH started collaboration with QMH AED Department to implement a Fracture Referral Program, allowing patients who sustain osteoporotic wrist fracture to receive early osteoporosis assessment and treatment. Pre-clinic assessment services are done by our DM nurse to provide talk and arrange investigations such as DXA scan, X-ray, laboratory test before 1st medical consultation to hasten treatment modality. We also provide services such as Prolia injection as well as day bed for Aclasta infusion to support our Bone Health Clinic service.






Osteoporosis Centre
Division of Endocrinology and Metabolism, Department of Medicine, Queen Mary Hospital

Loong Hong Nin Connie, Advanced Practice Nurse, QMH

The Osteoporosis Centre of Queen Mary Hospital was established in 2000. It is the first Osteoporosis Centre in Hong Kong dedicated to provide professional service to patients with osteoporosis, offer training and education to health care professionals and the general public. The Centre also conducts scientific research on osteoporosis and related bone diseases. Our scope of services include:

1. Medical care and consultation:

- Provide comprehensive assessment, monitoring and treatment to patients with osteoporosis and those with fragility fracture
- Collaborate with the Department of Orthopaedics and Trauma to enhance continuous care to patients with osteoporotic fracture

2. Nursing care, health education and promotion:

- Empower patients by providing education and support to people with osteoporosis
- Facilitate active communication between patients, their carers and health care professionals through the Osteoporosis Phone Direct Enquiry Service
- Enhance public awareness on the importance of prevention, early detection and treatment of osteoporosis and fragility fracture by hospital-based educational talks, production of educational materials and community health promotion activities

3. Professional Training and Education:

- Provide continuous training and education to health care professionals in the management of osteoporosis. Our centre is one of the co-organizers of the Endocrinology, Diabetes & Metabolism Hong Kong (EDM HK) Annual Meeting

4. Scientific Research

- Conduct evidence-based scientific research on osteoporosis and fragility fracture






Upcoming Professional Meetings

Course / Conference	Date / Duration	Venue
American Diabetes Association 66th Advanced Postgraduate Course https://professional.diabetes.org/meeting/annual-advanced-postgraduate-courses/67th-advanced-postgraduate-course	31st January - 2nd February, 2020	San Francisco, USA
13th International Conference on Advanced Technologies & Treatments for Diabetes (ATTD) https://d-net.idf.org/en/events/880-13th-international-conference-on-advanced-technologies-treatments-for-diabetes-attd.html?tag=431-research	19th - 22nd February, 2020	Madrid, Spain
10th Emirates Diabetes and Endocrine Congress https://edec-uae.com/	27th - 29th February, 2020	Dubai, United Arab Emirates
Diabetes UK Professional Conference 2020 https://www.diabetes.org.uk/diabetes-uk-professional-conference	18th - 20th March, 2020	Scotland, UK
The 7th International Conference on PreHypertension,Hypertension & Cardio Metabolic Syndrome 2020 https://www.prehypertension.org/	2nd - 5th April, 2020	Vilnius, Lithuania
Diabetes Update 2020 https://www.diabetesupdate.ca/	4th - 6th April, 2020	Boston, USA
The 5th Annual Diabetes, Obesity & Metabolic Disease Conference https:/www.cmemeeting.org/cme-conferences/new-orleans-louisiana-cme	17th - 19th April, 2020	Louisiana, USA
80th Scientific Session of American Diabetes Association(ADA) https://professional.diabetes.org/scientific-sessions	12th - 16th June, 2020	Chicago, USA
International Diabetes Federation - Diabetes Complications Congress 2020 https://www.idf.org/our-activities/congress/lisbon-2020.html	2nd - 4th July, 2020	Lisbon, Portugal
American Association of Diabetes Educators (AADE) Annual Conference 2020 https://www.emedevents.com/c/medical-conferences-2020/american-association-of-diabetes-educators-aade-annual-conference-2020	14th - 17th August, 2020	Georgia, USA
56th Annual Meeting of European Association for The Study of Diabetes (EASD) https://www.easd.org/annual-meeting/easd-2020.html	21st - 25th September, 2020	Vienna, Austria
14th International Diabetes Federation-Western Pacific Region Congress & 12th AASD Scientific Meeting https://www.idf.org/our-activities/congress/idf-2020.html	27th - 29th November, 2020	Shanghai, China

Announcement of AHKDN

The 12th AHKDN Annual Symposium & Annual General Meeting on 27th June 2020

The 2nd AHKDN Evidence-based Practice Symposium