



Everyone talking - A life journey with your kidneys
First series 2nd episode: 19 Oct 2021

Kidney Disease and you

Do you have a kidney problem- You need to know!

Guest speakers: Dr. Sunny Wong, Dr. William Lee
Moderators: Ms. Candy Chea, Dr. Samuel Fung

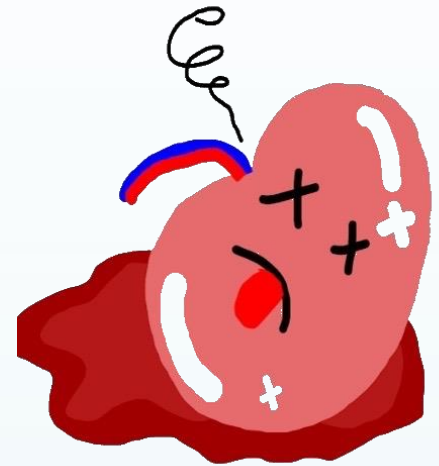


Do you have a kidney problem- You need to know!

1. Symptoms of Kidney Disease
2. Investigations and Diagnosis of Kidney Disease
3. Treatment for Kidney Disease
4. Kidney Disease and Drugs

Symptoms of Kidney Disease

- Kidney is a silent organ
- Kidney disease can be asymptomatic in early stage



Symptoms of Kidney Disease(Early Stage)

Urination symptom

- dysuria
- frequency
- hesitancy
- stone passage
- polyuria or oliguria
- nocturia

Abnormal urine

- red colour(haematuria)
- frothy (proteinuria)
- turbid (infection)

Headache
(hypertension)

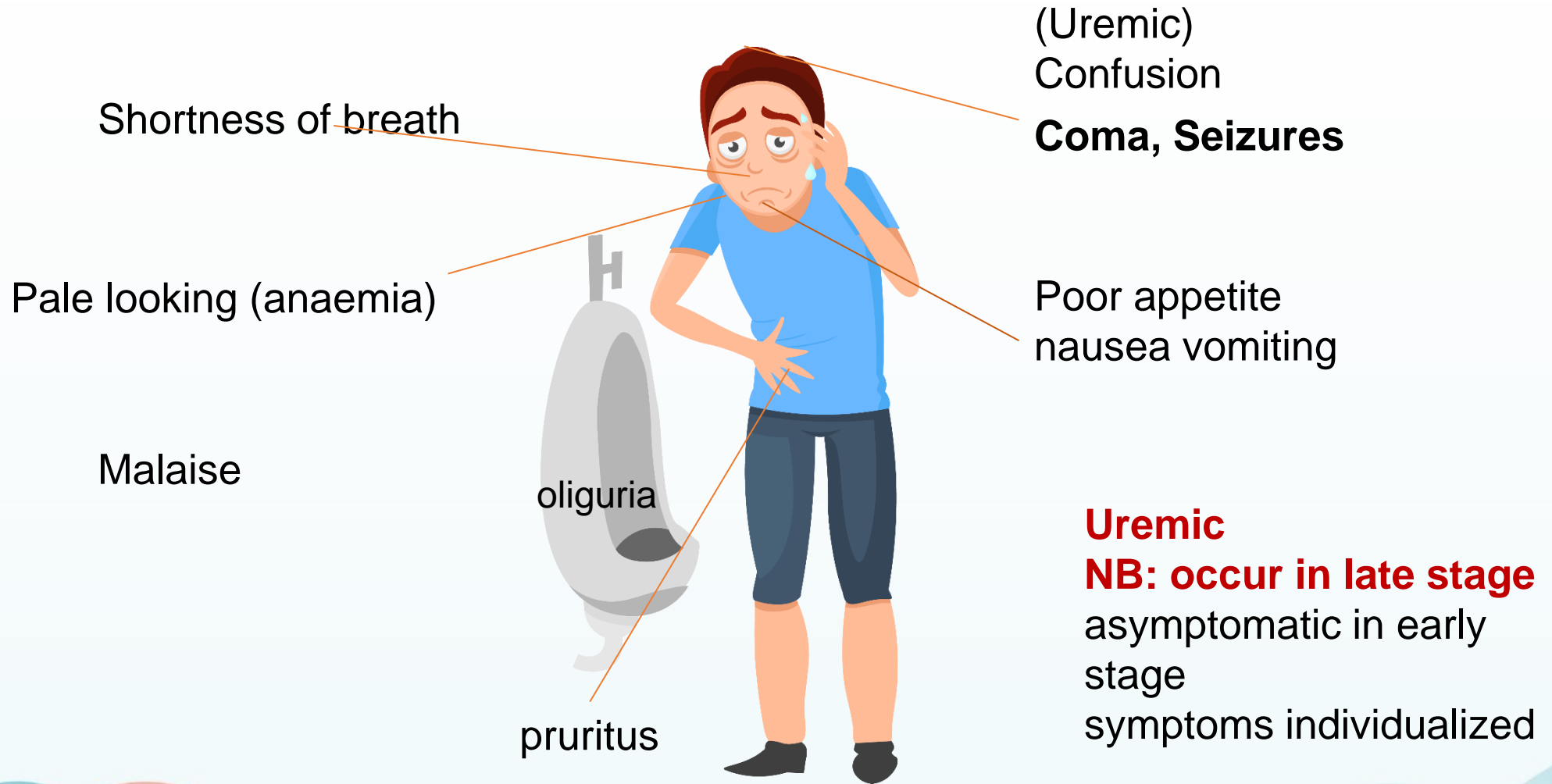
Eyelid puffiness

Loin pain

Ankle swelling



Symptoms of Renal Failure



Investigations and Diagnosis of Kidney Disease(1)

Blood Pressure Measurement



	Systolic (mmHg)	Diastolic(mmHg)
Normal Blood Pressure	<120	<80
Elevated Blood Pressure	120-129	<80
Stage 1 Hypertension	130-139	80-89
Stage 2 Hypertension	>140	>90

Investigations and Diagnosis of Kidney Disease(2)



Urinalysis



- Urine Dipstick



hematuria
proteinuria
glycosuria

- Microscopic Examination



Red blood cell
Cytology

Investigations and Diagnosis of Kidney Disease(2)

Methods for Measuring Proteinuria



**Collection
over a fixed
period of time**

24 hour urine collection
Total protein and estimated
Glomerular Filtration Rate
(eGFR)



Urine
Dip stick

Spot urine

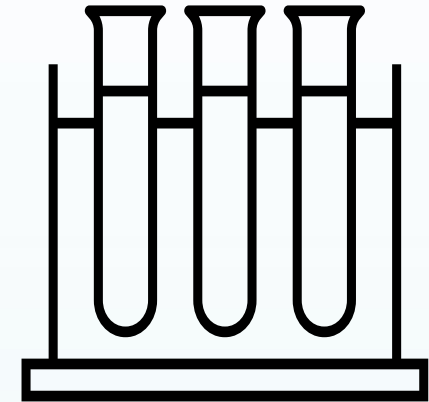


- Urine protein creatinine ratio(PCR)
- Urine albumin creatinine ratio(ACR)

Investigations and Diagnosis of Kidney Disease(3)

Kidney Function Assessment

- Blood: Urea 、 Creatinine 、 Urate 、
Electrolyte(Sodium 、 Potassium 、
Calcium 、 Phosphate)
- Estimated Glomerular Filtration Rate (eGFR)
-calculated from creatinine 、 age 、 sex



Investigations and Diagnosis of Kidney Disease(4)

Imaging Investigations

- Plain X ray (KUB)
- Ultrasound imaging of kidneys
- Computerized tomography of kidneys and urinary system



Investigations and Diagnosis of Kidney Disease(5)

Renal Biopsy

Kidney Pathological Assessment

- degree of kidney injury
- glomerulonephritis
- diabetic kidney disease



Kidney Injury

Acute

Chronic

Acute Kidney Injury

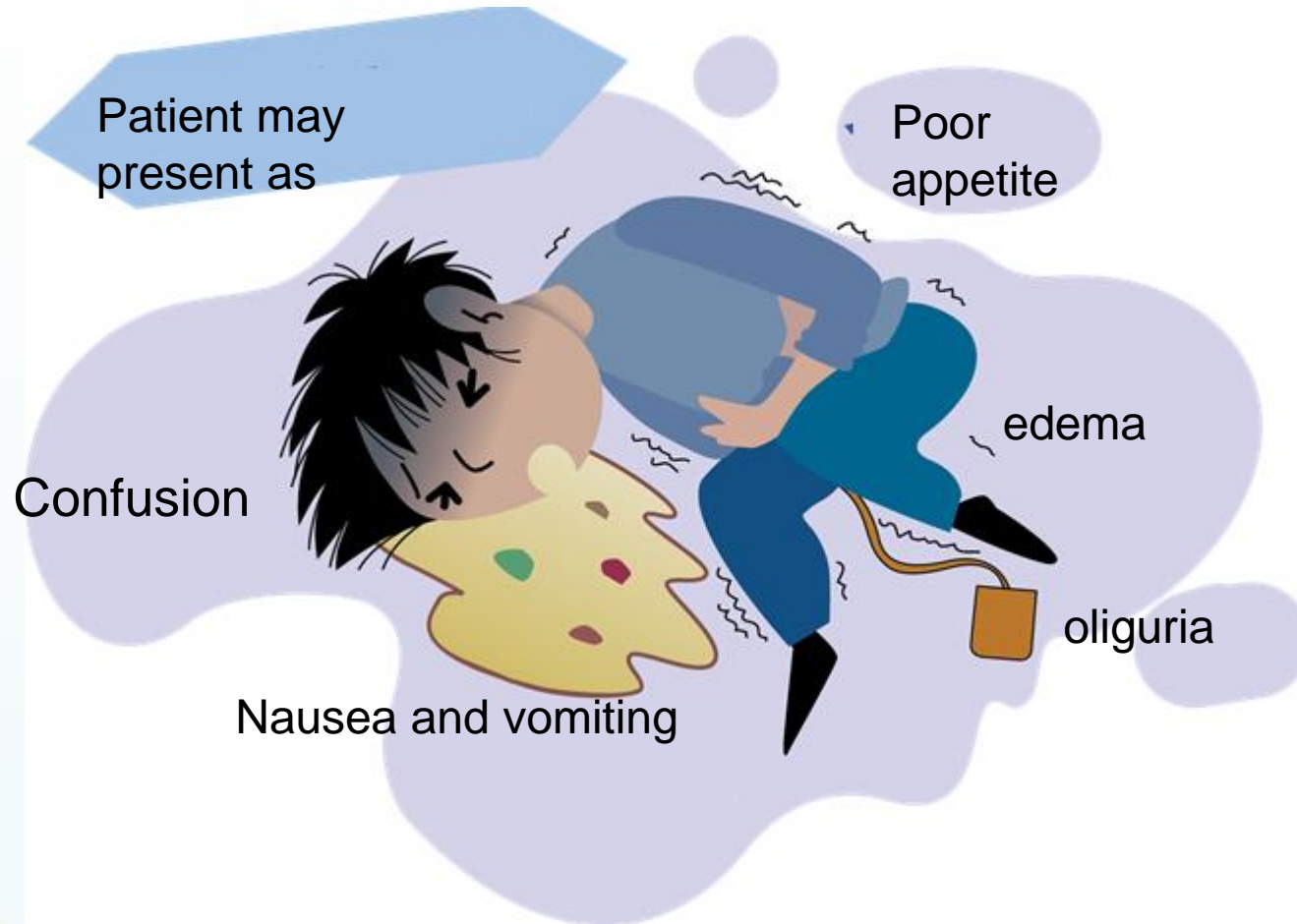
- Rapid deterioration of kidney function within a short period of time
- Multifactorial in etiology
- Asymptomatic in early stage and may be neglected

Causes of Acute Kidney Injury

Pre-renal :	Renal :	Post-renal :
<p>Impaired kidney perfusion , common cause of acute kidney injury</p> <p>Common etiology : Severe burn Massive hemorrhage Shock</p>	<p>Due to kidney disease</p> <p>Common etiology: Acute tubular necrosis Acute glomerulonephritis Drug toxicity</p>	<p>Due to obstruction of urinary tract</p> <p>Common etiology: Kidney stones Ureteric stricture Tumor Benign prostatic enlargement</p>

Symptoms of Acute Kidney Injury

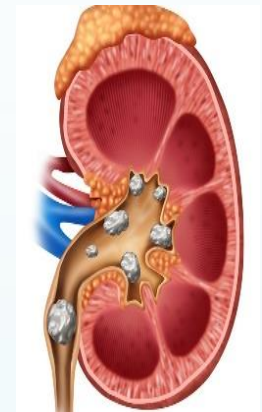
Moderate to Severe degree of Acute Kidney Injury



Treatment of Acute Kidney Injury

According to the etiology

- Dehydration: rehydration
- Glomerulonephritis: steroid
+/- immunosuppression
- Interstitial nephritis: stop the offending drug/toxin
+/- steroid
- Urinary tract infection: antibiotic
- Obstructive Nephropathy: relieve the obstruction



Treatment of Acute Kidney Injury

**May need dialysis support
if severe renal impairment**

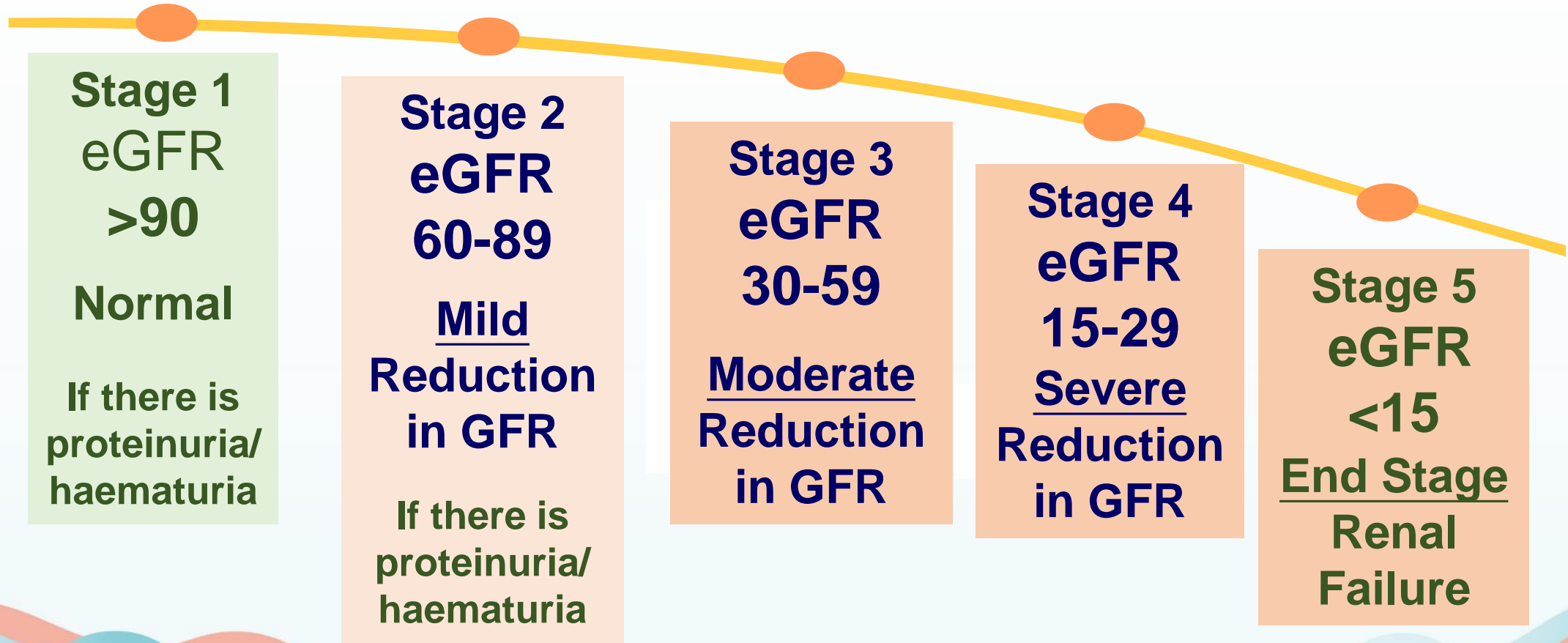


Definition of Chronic Kidney Disease

- Kidney Damage: Glomerular Filtration Rate(GFR)
 $<60\text{ml/min/1.73m}^2$
- Abnormalities in blood, urine and radiological examinations
- Persists for more than 3 months

Staging of Chronic Kidney Disease

Estimated Glomerular Filtration Rate (eGFR ml/min/1.73m²)



Treatment of Chronic Kidney Injury

1. Treating the cause of the chronic kidney disease
2. Measures to retard renal function deterioration
3. Monitor and manage complications of chronic kidney disease
4. Reduction of cardiovascular complications

Measures to retard renal function deterioration

Control Hypertension

<120/80



Reduction of Pressure within Kidney Tissue

Angiotensin Converting Enzyme Inhibitors (**ACEI**)

Angiotensin II Receptor Blockers (**ARB**)



Measures to retard renal function deterioration

Good Diabetic Control

HbA1c <6.5%



Retard Kidney Function Deterioration

Sodium-Glucose Cotransporter 2
Inhibitors (**SGLT2**)



Measures to retard renal function deterioration

Restrict dietary protein intake

Can retard kidney function deterioration and reduce proteinuria



Measures to retard renal function deterioration

Low Salt Diet

Reduce daily salt intake to one teaspoonful (5g) or below ,
can help to reduce blood pressure,
reduce proteinuria, and retard
kidney function deterioration

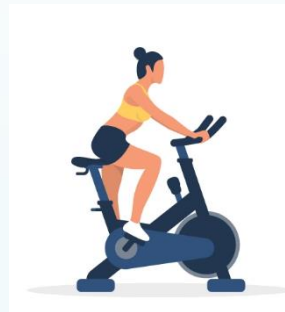


Measures to retard renal function deterioration

Lifestyle Modification

- **Regular Physical Activity**

Undertake moderate-intensity physical activity or to a level compatible with cardiovascular and physical tolerance for a cumulative duration of at least 150 minutes per week (e.g. 30 minutes 5 times per week) (brisk walking, biking on level ground, stair climbing, mopping floor, etc)



- **Quit Smoking**

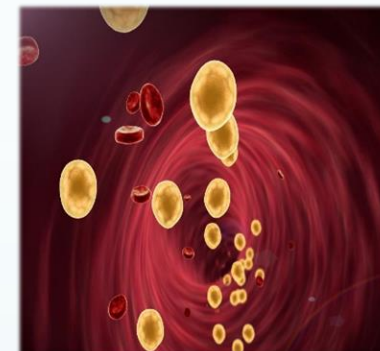


Reduction of Cardiovascular Complications

- Maintain normal body weight

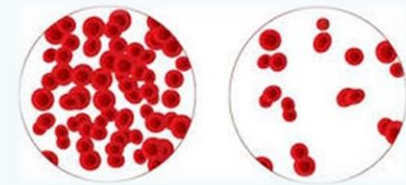
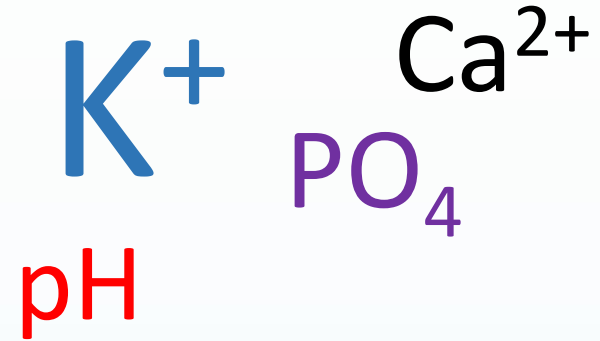


- Control blood lipid level



Monitor Complications of Kidney Disease

- Electrolytes like potassium, phosphate and calcium
- pH of blood
- Urate (gout)
- Edema
- Anaemia



Use of Medication in Chronic Kidney Disease Patients

As renal function fall, the dosage of some drugs need to be adjusted or stopped

For example:

- Anti-diabetic drug: **Metformin**
When eGFR:
<45ml/min. require dosage reduction
<30ml/min. need to be stopped
- Some antibiotics also require dosage reduction at lower eGFR



Use of Medication in Chronic Kidney Disease Patients

Try to Avoid:

- Non-steroidal Anti-inflammatory Drug
- Herbs/Health supplements



Caution: Don't use over-the-counter medicines without medical or pharmacist advice

For any questions, please consult your doctor



Host organiser: Hong Kong Kidney Foundation

<https://hk kf.org.hk/>



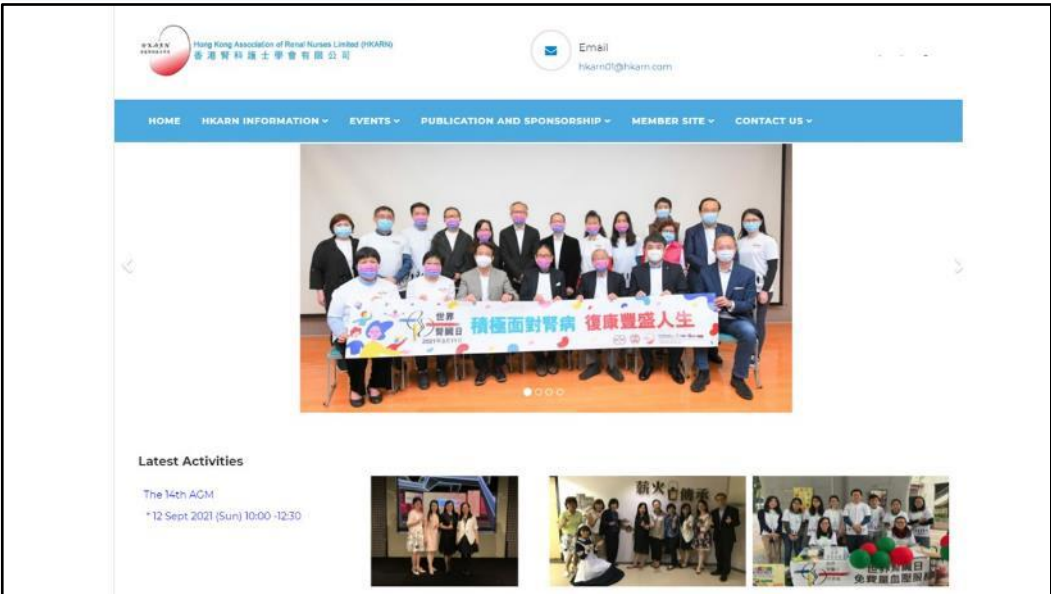
Co-organisers: Hong Kong Society of Nephrology

<https://www.hksn.org/>



Co-organisers: Hong Kong Association of Renal Nurses

<https://www.hkarn.com>



Partner: Alliance for Renal Patients Mutual Help Association

<http://www.arpmha.org.hk/>



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