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**INTRODUCTION**

The Clinical Practice Guidelines (CPG) on Management of Chronic Kidney Disease in Adults (Second Edition) was published in 2018. A Quick Reference (QR) and a Training Module (TM) are developed to increase the utilisation of the CPG. This TM has been developed by the members of Development Group (DG) of the CPG. The contents of the TM are extracted from the main CPG. It may be reproduced and used for educational purposes but must not be used for commercial purposes or product marketing.

**OBJECTIVES**

* To actively disseminate contents of the CPG and train healthcare providers on it; it may also be used for other educational purposes in the management of chronic kidney disease (CKD) in adults in any healthcare settings in Malaysia
* To assist the ‘trainers’ in delivering all components related to the implementation of the CPG systematically and effectively

**TARGET USERS**

All healthcare providers involved in the management of CKD in adults in primary, secondary and tertiary health care settings

|  |
| --- |
| This document contains a Training Module booklet on:   * Introduction, objectives, target users, authors and instructions for use * Proposed training programme/schedule * Test questionnaire * 4 lectures (in **PPT**) * 4 case discussions (in **PPT**) |

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**INSTRUCTIONS FOR USE**

This Training Module consists of:

1. Lecture - four sections
2. Case discussion - four sections
3. Training programme/schedule
4. Test questionnaire

(A booklet on this Training Module is enclosed together)

The training may be conducted in one day and consists of two parts. In part 1, didactic lectures are delivered to the whole group of training participants to inculcate the understanding on the management of CKD in adults. In Part 2, participants are grouped into smaller groups to deliberate on cases of CKD in adults with assigned facilitators. In both parts, there should be active participation from the training participants for effective learning.

The test questionnaire must be given to the training participants before the training session starts (pre-test) and after it ends (post-test). The pre-test is to assess the level of knowledge and understanding of training participants in the management of asthma in adults. The post-test is to ascertain the increase in the training participants’ knowledge after attending the training session.

Should the trainers have any queries, kindly forward to [htamalaysia@moh.gov.my](mailto:htamalaysia@moh.gov.my)

**Training of Core Trainers on**

**CPG Management of Chronic Kidney Disease in Adults (Second Edition)**

|  |  |  |
| --- | --- | --- |
| **Time** | **Lecture/case discussion** | **Lecturer/facilitator** |
|  | Registration (30 min)  Pre-test | MaHTAS |
|  | Welcome & Introduction (15 min) | Dr. Ching/ Dr. Aminuddin |
|  | Screening & Diagnosis of CKD (30 min) | Dr. Anita/Dr. Kow |
|  | Case Discussion 1 (1 hour) |  |
|  | Delaying CKD Progression (45 min) | Dr. Sunita/AP Dr. Lim/Dr. Ang |
|  | Case Discussion 2 (1 hour) |  |
|  | Referral for CKD to Nephrologist (1 hour) | Dr. Kong/Dr. Iliza |
|  | Case Discussion 3 (45 min) |  |
|  | Special Issues in CKD (45 min) | Dr. Ching/Ms. Manjulaa |
|  | Case Discussion 4 (1 hour) |  |
|  | Post-test  Closing | Dr. Kong/Dr. Ching/Dr. Amin |
|  | **TEA BREAK** |  |
|  | **LUNCH** |  |

**TEST QUESTIONNAIRE**

**Answer all questions by circling the right answers.**

| **No.** | **Questions** | **Answer** | |
| --- | --- | --- | --- |
| **True** | **False** |
| **1.** | **A 50-year-old male with 5 years history of ischaemic heart disease (IHD) presents at the Health Clinic for his follow-up. His body mass index (BMI) is 30.2. He complains of taking omeprazole quite regularly for his dyspepsia which has been prescribed by the general practitioner. There is a family history of polycystic kidney disease. Which of the following(s) is/are his risk factor(s) for kidney disease?** | | |
| 1. Age (50 years old) | T | F |
| 1. History of IHD | T | F |
| 1. BMI of 30.2 | T | F |
| 1. Prolonged use of proton-pump inhibitors | T | F |
| 1. Family history of polycystic kidney disease | T | F |
|  | | | |
| **2.** | **A 70-year-old female, who is diagnosed to have Type 2 diabetes mellitus, comes for a routine follow-up and found to have a proteinuria of 0.8 gm/day and creatinine of 90 µmol/L.** | | |
| 1. In the elderly, renal function should be assessed by using serum creatinine alone. | T | F |
| 1. A renal ultrasound is warranted. | T | F |
| 1. The patient has a high risk of chronic kidney disease (CKD) progression. | T | F |
| 1. Referral to nephrologist is warranted as estimated glomerular filtration rate (eGFR) <60 ml/min. | T | F |
| 1. Age is the predominant factor when deciding for renal replacement therapy. | T | F |
|  | | | |
| **3.** | **With regards to Angiotensin-Converting Enzyme Inhibitor (ACEi) and Angiotensin Receptor Blocker (ARB) in CKD, the following is true:** | | |
| 1. ARB is superior to ACEi. | T | F |
| 1. Overt proteinuria is reversible with ACEi/ARB therapy. | T | F |
| 1. When starting a patient with ACEi or ARB, renal function should be monitored only after one month of treatment. | T | F |
| 1. ACEi or ARB should be stopped if serum creatinine increased by 20% after starting ACEi or ARB. | T | F |
| 1. Prescribing ACEi and ARB in combination should be avoided. | T | F |
|  | | | |
| **4.** | **Which of the agents below is proven to have anti-proteinuric effect?** | | |
| 1. Non-dihydropyridine calcium channel blocker/CCB (e.g. diltiazem) | T | F |
| 1. T-type of Dihydropyridine CCB (e.g. lecardipine) | T | F |
| 1. ACEi/ARB | T | F |
| 1. Aldosterone antagonist | T | F |
| 1. Atorvastatin | T | F |
| **5.** | **In the treatment of hypertension in CKD, the following is true:** | | |
| 1. Any anti-hypertensive drug can be used to lower blood pressure in patients with CKD with no co-morbidities and no proteinuria. | T | F |
| 1. Target blood pressure for non-diabetes should be ≤140/90 mmHg if proteinuria is <1 g/day. | T | F |
| 1. Target blood pressure for diabetes should be <130/80 mmHg irrespective of the amount of proteinuria. | T | F |
| 1. ACEi/ARB is the first choice in all diabetes with micro- or macroalbuminuria. | T | F |
| 1. Dual RAS blockade can be considered in non- DKD patients who remain hypertensive and have proteinuria > 0.5gm/day | T | F |
|  |  |  |  |
| **6.** | **Which of the following drug(s) should be avoided in patient with eGFR <30 ml/min?** | | |
| 1. Glibenclamide (Daonil) | T | F |
| 1. Metformin | T | F |
| 1. Sodium-glucose co-transporter-2/SGLT2 inhibitors (empagliflozin) | T | F |
| 1. Nitrofurantoin | T | F |
| 1. Dipeptidyl peptidase-4 (DPP4) inhibitors | T | F |
|  | | | |
| **7.** | **Which of the following statements are true in CKD?** | | |
| 1. Lowering HbA1c to 6.5 - 7% reduces the development of micro- and macroalbuminuria. | T | F |
| 1. The target HbA1c should be <6.5% for all patients with diabetes kidney disease (DKD) irrespective of the co-morbidities. | T | F |
| 1. SLGT2 inhibitors may increase proteinuria in DKD | T | F |
| 1. There is an increased risk of forefoot amputation in patients given canagliflozin | T | F |
| 1. All DPP4 inhibitors require dosage adjustment in CKD. | T | F |
|  | | | |
| **8.** | **Regarding dietary and lifestyle modification in CKD:** |  |  |
| 1. Low protein diet (0.6 - 0.8 g/kg/day) is one of the measures to retard progression in non-diabetic CKD. | T | F |
| 1. Keto-acid supplementation should be routinely given to all patients with CKD Stage 3 – 5. | T | F |
| 1. A low protein diet (0.6g/kg/day) may cause malnutrition in overt DKD if not well supervised by dietitian. | T | F |
| 1. Allopurinol should be routinely prescribed to all patients with CKD to reduce uric acid levels. | T | F |
| 1. Statin can reduce proteinuria and delay CKD progression. | T | F |
|  | | | |
| **9.** | **Which of the following statements are true?** | | |
| 1. Pregnancy is safe for all women with kidney disease | T | F |
| 1. Pregnancy with CKD Stage 4 has poor foetal outcome. | T | F |
| 1. Pregnancy should be avoided in women with heavy proteinuria. | T | F |
| 1. Women with CKD have a higher risk of pregnancy-induced hypertension. | T | F |
| 1. Pregnancy can worsen proteinuria and accelerate hypertension in CKD. | T | F |
|  | | | |
| **10.** | **The following patients should be referred immediately to a nephrologist:** | | |
| 1. A 65-year-old man with acute retention of urine. | T | F |
| 1. A 40-year-old Systemic Lupus Erythematosus patient with rapid deterioration of kidney function. | T | F |
| 1. A diabetic patient with eGFR 60 ml/min in 2014 and 55 ml/min in 2018. | T | F |
| 1. A 25-year-old woman with blood pressure of 170/105 mmHg on a thiazide diuretic, ACEi and CCB. | T | F |
| 1. A patient with life threatening hyperkalemia. | T | F |

**ANSWERS FOR TEST QUESTIONNAIRE**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Question** | | **Answers** | **Question** | | **Answers** | **Question** | | **Answers** |
| **1.** | a. | **F** | **5.** | a. | **T** | **8.** | a. | **T** |
| b. | **T** | b. | **F** | b. | **F** |
| c. | **T** | c. | **T** | c. | **T** |
| d. | **T** | d. | **T** | d. | **F** |
| e. | **T** | e. | **T** | e. | **F** |
| **2.** | a. | **F** | **6.** | a. | **T** | **9.** | a. | **T** |
| b. | **F** | b. | **T** | b. | **T** |
| c. | **T** | c. | **T** | c. | **T** |
| d. | **F** | d. | **T** | d. | **T** |
| e. | **F** | e. | **F** | e. | **T** |
| **3.** | a. | **F** | **7.** | a. | **T** | **10.** | a. | **F** |
| b. | **T** | b. | **F** | b. | **T** |
| c. | **F** | c. | **F** | c. | **F** |
| d. | **F** | d. | **T** | d. | **T** |
| e. | **T** | e. | **F** | e. | **T** |
| **4.** | a. | **T** |  |  |  |  |  |  |
| b. | **T** |  |  |  |  |  |  |
| c. | **T** |  |  |  |  |  |  |
| d. | **T** |  |  |  |  |  |  |
| e. | **F** |  |  |  |  |  |  |