

ASSESSMENT OF 15 MCQs

FPSC No : 77
MCQS ON DIABETES MELLITUS UPDATE
Submission DEADLINE: 19 March 2019, 12 NOON

INSTRUCTIONS

- To submit answers to the following multiple choice questions, you are required to log on to the College Online Portal (www.cfps2online.org)
- Attempt ALL the following multiple choice questions.
- There is only ONE correct answer for each question.
- The answers should be submitted to the College of Family Physicians Singapore via the College Online Portal before the submission deadline stated above.
- There will be NO further extension of the submission deadline

1. Which of the following is false about dipeptidyl peptidase 4 (DPP-4) inhibitors?

- A. They are associated with low hypoglycaemia risk
- B. DPP-4 inhibitors generally reduce HbA1c by around 0.5% to 0.8%.
- C. As a class, these agents have proven benefits in cardiovascular death and heart failure reduction.
- D. Some of these agents are associated with non-negligible risk of hospitalization due to heart failure
- E. Adverse events reported include acute pancreatitis and bullous pemphigoid.

2. A major disadvantage of the use of sulfonylureas in patients with diabetes is:

- A. Vitamin B12 malabsorption
- B. Weight loss
- C. Treatment cost
- D. Risk of hypoglycaemia
- E. Risk of urinary tract infections

3. SGLT2 inhibitors are characterized by the following, except:

- A. Potential for weight loss
- B. Reduction in hospitalisation for heart failure
- C. A class effect of increased risk of lower limb amputation
- D. A class effect of increased risk of urogenital track infections
- E. Reduction in cardiovascular risk

4. When using SGLT2 inhibitors in patients with renal impairment, which statement is correct:

- A. No dose adjustment is needed for dapagliflozin 10mg at eGFR >45 ml/min/1.73m²
- B. No dose adjustment is needed for empagliflozin 25 mg at eGFR 45-60 mL/min/1.73 m²
- C. No dose adjustment is needed for canagliflozin 300 mg at eGFR 45-60ml/min/1.73m²

D. No dose adjustment is needed for all 3 SGLT2i at eGFR 45-60ml/min/1.73m²

E. No dose adjustment is needed for all 3 SGLT2i at eGFR 30-45ml/min/1.73m²

5. In the management of type 2 diabetes mellitus, which of the following is not a rational consideration for drug choice:

- A. Patient characteristics and preferences
- B. Efficacy and durability of glucose-lowering effect
- C. Colour of the pill
- D. Safety and side effects
- E. Potential for cardiovascular and renal benefits

6. The Action to Control Cardiovascular Risk in Diabetes (ACCORD) trial of intensive glucose lowering in diabetic patients at high risk of cardiovascular disease was stopped prematurely. Which of the following is one of the main messages from the trial?

- A. Intensive glucose lowering increases rate of mortality
- B. Intensive glucose lowering increases risk of myocardial infarction
- C. Intensive glucose lowering reduces hospitalization for heart failure
- D. Intensive glucose lowering was achieved with no increase risk of hypoglycaemia
- E. Intensive glucose lowering was achieved with no weight gain

7. A 56-year old male has type 2 diabetes mellitus for past 5 years. His glycosylated hemoglobin, HbA1c is 7.5% while on metformin 850 mg tds and glipizide 5 mg daily. He reported multiple episodes of hypoglycaemia over the past 6 months. He is otherwise well and there was no change in his body weight. On examination, temperature 37C, his blood pressure is 150/88 mmHg, and pulse rate 80 per minute. His body mass index is 30.1 kg/m².

Which of the following would be the most

appropriate therapeutic strategy for this patient?

- A. Replace glipizide with gliclazide
- B. Replace glipizide with dapagliflozin
- C. Replace glipizide with sitagliptin
- D. Replace glipizide with insulin glargine
- E. Stop glipizide and observe for next 6 months

8. A 50-year old female with history of type 2 diabetes for past 10 years was admitted for progressive breathlessness and reduced effort tolerance. Further investigations confirmed heart failure with preserved ejection fraction. His glycosylated hemoglobin is 8.0% while on metformin 850 mg bd and glipizide 5 mg bd. Which of the following would be your glucose-lowering agent of choice to optimize his diabetes control?

- A. Dapagliflozin
- B. Insulin aspart
- C. Insulin glargine
- D. Liraglutide
- E. Sitagliptin

9. John, a 60-year old male has type 2 diabetes mellitus for the past 20 years. He has moderate retinopathy and albuminuria. He has peripheral neuropathy affecting his both lower limbs. His glycosylated hemoglobin is 8.0% while on metformin 850 mg bd, glipizide 10 mg bd, sitagliptin 100 mg om and dapagliflozin 10 mg daily. What would your therapeutic consideration to improve his diabetes outcomes?

- A. Reduce HbA1c to 7% and below with insulin
- B. Optimize hypertension and dyslipidemia control
- C. Order a CT coronary artery
- D. Start aspirin and high dose statin
- E. Order blood pro-BNP to detect subclinical heart failure

10. Majority patients with type 2 diabetes are overweight or obese. Which of the following would be most appropriate in the diabetes management with potential of causing weight loss?

- A. Gliclazide and glargine
- B. Liraglutide and dapagliflozin
- C. Metformin and acarbose
- D. Metformin and rosiglitazone
- E. Metformin and sitagliptin

11. The UKPDS showed that every 1% reduction in mean HbA1c levels was associated with a reduction of 37% in microvascular complications such as nephropathy, retinopathy and neuropathy. Which of the following statement is true?

- A. The relationship between HbA1c and microvascular complications is linear.
- B. There is no lower threshold of risk observed for

microvascular endpoints which suggest that there is benefit in lowering HbA1c to less than 7%.

- C. Weight gain and hypoglycemia are not associated with aggressive glycemic control.
- D. The pathophysiology of microvascular and macrovascular complications is the same.
- E. For every 1% reduction in mean HbA1c, the same magnitude of risk reduction is seen for macrovascular complications.

12. Based on the ACCORD, ADVANCE and VADT studies, which of the following statement is true?

- A. The participants in the 3 trials were similar in characteristics to the earlier UKPDS trial.
- B. With an aggressive titration protocol, ACCORD achieved its target HbA1c of < 6.0%.
- C. Severe hypoglycemia was more likely in participants who were assigned to the intensive arm.
- D. ACCORD study did not identify a clear explanation for the excess mortality in the intensive treatment arm and no worrisome characteristics were observed.
- E. Long-term follow-up of the 3 trials showed the benefit of the 'legacy effect'.

13. Based on the Steno-2 trial and its 21-year follow-up, which of the following statement is true?

- A. The main aim of Steno-2 was to achieve intensive glycemic control in T2DM and microalbuminuria.
- B. After the initial Steno-2 trial was completed, all subjects received standard care for the 21-year follow-up period.
- C. There is no long-term survival benefit of early intervention intensification in patients compared to intensification in later stages of the disease.
- D. The hazard for microvascular complications did not continue to decrease in the intensive therapy group after the initial trial ended.
- E. The increase in lifespan in the intensive therapy group is matched by time free from incident cardiovascular disease.

14. Based on present knowledge, which of the following statement regarding SGLT2-inhibitors is true? SGLT2 inhibitors:

- A. Reduces the risk of hospitalisation for heart failure in patients without known atherosclerotic CVD.
- B. Reduces the risk of myocardial infarction, stroke and cardiovascular death in patients without known atherosclerotic CVD.
- C. Reduces the risk of progression of renal disease only in patients with known atherosclerotic CVD.
- D. Glucose control is the reason for the reduction in vascular complications.
- E. SGLT2-inhibitors are the only pharmacological class

of diabetes medications shown to decrease the risk of cardiovascular disease.

- 15. Mr T is a 68-year-old gentleman with a history of T2DM, hyperlipidemia and hypertension. He has diabetes nephropathy and a history of a myocardial infarction 3 years ago. His diabetes medications include a combination of oral agents and basal insulin. Despite gradual intensification of his diabetes medications, his HbA1c remains at an average of 8% over the last year. Lately, he complains of some mild giddiness in the late afternoons especially on a busy day. His premeal SMBG ranges from 3.8 to 9.4 mmol/L. His latest BP is 170/90 mmHg and LDL cholesterol level is 3.1 mmol/L. As his primary physician, the most appropriate step would be to:**
- A. Intensify his glycemic control, BP control and optimize his LDL cholesterol level with a higher dose of statins to decrease the risk for another cardiovascular event.
 - B. Not to alter treatment as he has achieved his individualized targets.
 - C. Check for specific symptoms of hypoglycemia and consider modifying his medications or his meals.
 - D. Switch to a SGLT2 inhibitor or GLP1 receptor agonist for their beneficial effects in patients with established CVD.
 - E. The symptoms are not related to glycaemic control and he should be investigated further.