POST GRADUATE DIPLOMA IN CLINICAL CARDIOLOGY (PGDCC)

01643

Term-End Examination

June, 2014

MCC-006 : CARDIO VASCULAR EPIDEMIOLOGY

Time : 2 hours　　　　　　　　　　　　　　　　　*Maximum Marks : 60*

Note :

(i) *There will be multiple choice type of questions in this examination which are to be answered in* <u>*OMR Answer Sheets*</u>*.*

(ii) *All questions are* **compulsory***.*

(iii) *Each question will have four options and only one of them is correct. Answers have to be marked in figures in the appropriate rectangular boxes corresponding to what is the correct answer and then blacken the circle for the same number in that column by using HB or lead pencil and not by ball pen* <u>*in OMR Answer Sheets*</u>*.*

(iv) *If any candidate marks more than one option it will be taken as the wrong answer and no marks will be awarded for this.*

(v) *Erase completely any error or unintended marks.*

(vi) *There will be* **90** *questions in this paper and each question carries* **equal** *marks.*

(vii) *There will be no negative marking for wrong answers.*

(viii) *No candidate shall leave the examination hall at least for one hour after the commencement of the examination.*

1. Leading cause of global death in GBD 2000 study in developing countries :
   (1) Cerebro-vascular Diseases
   (2) Tuberculosis
   (3) Ischaemic Heart Disease
   (4) HIV/AIDS

2. Premature CAD is defined as CAD occurring before the age of :
   (1) 55 years in women and 65 years in men
   (2) 55 years in men and 65 years in women
   (3) 45 years in women and 55 years in men
   (4) 55 years in men and 55 years in women

3. The burden of CAD in India is about :
   (1) 0.8% of GDP
   (2) 0.4% of GDP
   (3) 5% of GDP
   (4) 2% of GDP

4. Most common cause of DALY (Disability Adjusted Life Years) in India 2000 :
   (1) Ischaemic Heart Disease
   (2) HIV/AIDS
   (3) Perinatal Conditions
   (4) Lower Respiratory Conditions

5. Most important risk factor for development of CAD throughout India :
   (1) Diabetes Mellitus
   (2) Hypertension
   (3) Smoking
   (4) Obesity

6. Earliest Recognizable Pathological Lesion in CAD is / are :
   (1) Fibrous plaque
   (2) Atheroma
   (3) Fatty streak
   (4) All of these

7. Mechanism of atheroma formation is related to :
   (1) Damage to inner lining (Endothelium)
   (2) Changes in blood lipids
   (3) Both (1) and (2)
   (4) None of these

8. Example of casual factor that are directly responsible for promoting arteriosclerosis :

   (1) High triglyceride level   (2) Age

   (3) Sex of individual   (4) High blood cholesterol

9. Which of the following statement is/are **true** ?

   (1) PUFAs. lowers LDL and HDL

   (2) MUFAs. lowers LDL without affecting HDL

   (3) Trans-fats have more atherogenic risk than saturated fats

   (4) All of these

10. All of the following are risk factors for atherosclerosis **except** :

    (1) Increased waist - hip ratio   (2) Hyperhomocysteinemia

    (3) Decreased fibrogen level   (4) Decreased HDL level

11. Approximately how much quantity of nicotine is absorbed with each puff of smoke ?

    (1) 50 - 150 μg   (2) 500 - 600 μg   (3) 1 - 2 mg   (4) 5 - 6 mg

12. How much duration of physical activities improved the cardiac risk profile and decreased presence of associated risk factor (i.e. predicted to reduce CAD mortality) according to the Framingham offspring study :

    (1) 30 min/week   (2) 1 hour/week

    (3) 2 hours/week   (4) 3 hours/week

13. Morbid Obesity is defined as BMI more than :

    (1) 30   (2) 40   (3) 50   (4) 60

14. Strongest anthropometric measure according to recent INTERHEART study which is associated with risk of Myocardial infarction :

    (1) WHR (Waist - Hip Ratio)   (2) Waist circumference

    (3) BMI   (4) Abdominal Girth

15. One of the diagnostic criteria for metabolic syndrome (Syndrome X) :

    (1) High serum homocysteine   (2) High serum Triglyceride

    (3) High Serum Adiponectin   (4) High LDL cholesterol

16. According to IDF (International Diabetes Foundation) definition of Metabolic Syndrome :

    (1) Central obesity (waist - circumference >/= 94 cm is europoid men and >/= 80 cm for europoid women

    (2) Elevated TG level ($\geq$150 mg/dl) and reduced HDL (<40 mg/dl in men and <50 mg/dl in women)

    (3) Systolic BP>130 mmhg or Diastolic BP$\geq$85 mmhg and raised fasting blood glucose $\geq$100 mg/dl

    (4) All of the above

17. LVH in men is defined as ventricular mass exceeding more than :

    (1) 111 gm/m^2 (2) 121 gm/m^2 (3) 131 gm/m^2 (4) 141 gm/m^2

18. Most plausible infections agent associated with CAD :

    (1) Cytomegalovirus   (2) Chlamydia Pneumonia

    (3) HSV   (4) H. Pylori

19. Veterans administration high density lipoprotein cholesterol intervention strictly (VA HIT) states that :

    (1) There is strong and graded positive association between total and LDL cholesterol and risk of vascular events (Mainly IHD)

    (2) The increase in HDL cholesterol in CAD patients is followed by a significant decreases in the coronary events

    (3) Triglycerides strongly contribute to an increased risk of CAD

    (4) All of the above

20. There is High risk of CAD when TC/HDLC ratio is more than :

    (1) 4   (2) 4.5   (3) 5   (4) 5.5

21. Accelerated atherosclerosis and thrombosis in patients with DM are mainly due to :
    (1) Systemic inflammation
    (2) Oxidative stress and systemic endothelial dysfunction combined with coagulation and platelet function abnormalities
    (3) Impaired fibrinolysis
    (4) All of the above

22. Recent case control studies found that, compared to Non-diabetic patients, diabetic subjects typically have :
    (1) More severe coronary artery disease and more extensive coronary calcifications
    (2) Higher prevalence of left main stem disease
    (3) Reduced coronary collateral artery recruitment
    (4) All of the above

23. All of the following are conventional risk factors for CAD **except** :
    (1) Smoking   (2) Hypertension
    (3) Diabetes Mellitus   (4) Insulin resistance

24. All of these are true **except** :
    (1) Levels of Lp (a) are largely genetically determined
    (2) Genetic factors account for 30% of variation in Lp (a) levels in population
    (3) There is preferential uptake of Lp (a) into macrophages in atherosclerotic plagues via binding to fibrin and plasminogen receptors
    (4) Because of structural similarity between Lp (a) and plasminogen, so that former interferes with plasminogen activation and creates a thrombogenic milieu

25. "Barker Hypothesis" states :
    (1) Acceleration of CAD epidemic in India is Due to Demographic transition to an older population, as a result of increasing life expectancy
    (2) Acceleration of CAD is due to confluence of both conventional and non-conventional risk factors
    (3) There is relationship between low birth weight which is widely prevalent amongst Indian newborns and enhanced susceptibility to CAD in adult life
    (4) All of the above

26. According to INTERHEART study, two strongest predictors of acute MI risk are :

(1) Diabetes and Hypertension

(2) Apo B/Apo A-1 ratio and current smoking

(3) Diet and hypertension

(4) Apo B/Apo A-1 ratio and diabetes

27. According to Framingham and MRFIT study, all the following statements magnified risk are **true** except :

(1) Estimated 10 years coronary risk based on 6 risk factors - BP, TC, HDL, DM, smoking and ventricular enlargement

(2) 10 years coronary risk in those without any risk factors is zero

(3) Coronary risk increases to 20% when systolic BP rises to 160 mmHg and TC becomes 26 mg/dl

(4) Cigarette smoking increases the coronary risk further to 40% whereas cardiac enlargement causes risk to about 60%

28. In lifetime risk estimation of CAD and CVD, "OPTIMAL risk factors" include :

(1) Total cholesterol < 180 mg/dl, BP < 120 / 80 mmHg, non-smoker, non-diabetic

(2) Total cholesterol < 180 - 199 mg/dl, BP < 120 - 139 / 80 - 89 mmHg, non-smoker, non-diabetic

(3) Total cholesterol <200 - 239 mg/dl, BP < 140 - 159 / 90 - 99 mmHg, non-smoker, non-diabetic

(4) Total cholesterol > 240 mg/dl, BP > 160/100 mmHg, smoker or diabetic

29. According to lifetime risk estimation, lifetime risk (to age 95yrs) for CVD and mortality at age 50 in men with optimal risk factors :

(1) 5.2%   (2) 8.2%   (3) 26.9%   (4) 36.4%

30. According to lifetime risk estimation, lifetime risk (to age 95 yrs) for CVD and mortality at age 50 in men with $\geq$ 2 major risk factors :

(1) 36.4%   (2) 45.5%   (3) 50.4%   (4) 68.9%

31. How much percentage of men and women will have a stroke within 6 years after a heart attack :
   (1)   11% men and 8% women
   (2)   8% men and 11% women
   (3)   7% men and 6% women
   (4)   6% men and 7% women

32. How much percentage of men and women will die, within 1 year after a heart attack :
   (1)   18% men and 34% women
   (2)   34% men and 18% women
   (3)   25% men and 38% women
   (4)   38% men and 25% women

33. Protecting healthy population acquiring the bad and unhealthy lifestyle like smoking or faulty diet habits, is an example of :
   (1)   Primordial prevention
   (2)   Primary prevention
   (3)   Secondary prevention
   (4)   Rehabilitation

34. Measures to prevent the recurrences of heart attack or stroke is an example of :
   (1)   Primordial prevention
   (2)   Primary prevention
   (3)   Secondary prevention
   (4)   Rehabilitation

35. Lifestyle modifications consists mainly of :
   (1)   Change in diet
   (2)   Stoppage of smoking and tobacco
   (3)   Encouragement of physical activity and behavioural change for stress management
   (4)   All of these

36. Regardless of the type of statin or whether the study is 1° and 2° prevention trial, there is reduction in coronary events approximately by :
   (1)   20%
   (2)   30%
   (3)   40%
   (4)   50%

37. All of the following are examples of low-glycemic index foods except :
   (1)   Whole fruits
   (2)   Most legumes
   (3)   Brown rice
   (4)   White bread

38. Fish, an important source of PUFA, known as omega-3, has following effect on cholesterol level :

    (1) Lowers LDL, Raises HDL   (2) Lowers LDL, Lowers HDL

    (3) Raises LDL, No change in HDL   (4) Raises LDL, Reduces HDL

39. All of the following contains monounsaturated fat **except** :

    (1) Olive oil   (2) Peanut oil

    (3) Almonds   (4) Coconut oil

40. All of the following statements are **true**, except :

    (1) Proteins from animal source like meat and organ meats, considered as "complete" proteins and proteins from plant as "incomplete" proteins.

    (2) Animal proteins are bad and plant proteins are good as far as heart care is concerned.

    (3) Animal proteins come with lot of unsaturated fats and plant proteins with saturated fats.

    (4) Plant proteins do not increase homocysteine unlike animal proteins.

41. Diet recommendation made by WHO are as follows **except** :

    (1) Total fat (% energy) 15-30%

    (2) Total carbohydrate (% energy) 55-75%

    (3) Cholesterol < 300 mg/day

    (4) salt > 15 gm/day

42. Benefits of smoking cessation are all **except** :

    (1) Immediate benefit is a decrease in anginal episodes and improvement in effort tolerance

    (2) Only one year after quitting, risk of heart attack reduced by 90%

    (3) Ten-years after quitting, male ex-smokers have same mortality as non-smokers

    (4) Lung cancer mortality is reduced by 60%, 5 years after quitting

43. All of the following statement regarding alcohol intake are true **except** :
    (1) People who don't drink 1 or 2 ounces of alcohol / day with 2-3 alcohol free days every week tend to live longer than people who drink more than this amount or who don't drink
    (2) Alcohol causes increase in the level of HDL
    (3) Alcohol causes increase in the platelet activity
    (4) Alcohol predominantly reduces active events like MI and sudden death by influencing vascular reactivity

44. Physical exercise has following effects **except** :
    (1) Has a favourable effect on lipid profile
    (2) Facilitates utilization of glucose and increases insulin sensitivity
    (3) Increases stroke volume and cardiac output
    (4) Increases platelet aggregation and fibrinogen level

45. During exercise, target heart rate is :
    (1) 25-30% of maximum heart rate (2) 30-50% of maximum heart rate
    (3) 50-80% of maximum heart rate (4) 90% of maximum heart rate

46. Usual goal of treatment in patients of CAD is to achieve BP :
    (1) Systolic < 120, Diastolic < 80 (2) Systolic < 130, Diastolic < 90
    (3) Systolic < 130, Diastolic < 80 (4) Systolic < 140, Diastolic < 90

47. In controlling BP in hypertensive patients with CAD, which class of drugs are preferred :
    (1) ACE inhibitors (2) Beta-blockers (3) ARB's (4) CCB's

48. All of the following statements about anti-hypertensives in special situation are **correct, except** :
    (1) Diabetes with HTN requires an ACE inhibitors or an ARB
    (2) Patients with peripheral artery disease calcium channel blocker will be better
    (3) Hypertensives with CAD will require beta blocker
    (4) Patients with impaired LV systolic function and frank heart failure calcium channel blockers preferred

49. In management of dyslipidemia, the threshold for initiating treatment with a statin is :

(1) Total cholesterol ≥ 4 mmol/l and/or LDL ≥ 3 mmol/l

(2) Total cholesterol ≥ 5 mmol/l and/or LDL ≥ 3 mmol/l

(3) Total cholesterol ≥ 6 mmol/l and/or LDL ≥ 4 mmol/l

(4) Total cholesterol ≥ 5 mmol/l and/or LDL ≥ 4 mmol/l

50. Optimal lipid levels are (according to ATP-III) NCEP - adult treatment panel :

(1) LDL cholesterol < 130, HDL > 40, TG < 200

(2) LDL cholesterol < 160, HDL > 60, TG < 200

(3) LDL cholesterol < 100, HDL > 60, TG < 150

(4) LDL cholesterol < 100, HDL > 40, TG < 200

51. All of the following statements regarding lipid management in CAD patients are **true** except :

(1) In patients with acute myocardial ischaemia and in particular MI. Sr. total Cholesterol as well as Sr. HDL cholesterol decrease

(2) Whatever may be the true total cholesterol during acute phase lipid profile (ideally fasting) should be measured after 24 weeks

(3) For patients with following cholesterol check up ≥ 2.0 mmol/l should be given lipid lowering therapy along with TLC (Total Lifestyle Change)

(4) Younger patients (< 55 yrs for men and < 65 yrs for women) with CAD and cholesterol > 5 mmol/l % or any patient whose sr. cholesterol is > 8 mmol/l % should have their 1st degree blood relatives screened for total cholesterol

52. According to European guidelines, LDL-C goals based on global risk in close relatives of patients with early onset CVD or asymptomatic high risk patients :

(1) < 96 mg/dl   (2) < 115 mg/dl

(3) < 125 mg/dl   (4) < 150 mg/dl

53. How much percentage of patients of diabetes die from macro vascular disease (mainly CAD)

(1) 50%   (2) 60%   (3) 70%   (4) 80%

54. According to WHO guidelines, following definition is **incorrect** :

   (1)   Fasting plasma glucose > 7 mmol/l % - designated as having diabetes

   (2)   Fasting plasma glucose > 7 mmol/l % but a 2 hour value > 7 and < 11.1 mmol/l % designated as having IGT (impaired glucose tolerance)

   (3)   Fasting plasma glucose > 6.1 mmol/l % but < 7 mmol/l % - designated as having IFG (impaired fasting glycaemia)

   (4)   None of these

55. Threshold for antihypertensive treatment in Type - I DM is :

   (1) $\geq$ 130 mmHg systolic and/or 80 mmHg diastolic

   (2)   < 125 mmHg systolic and/or < 75 mmHg diastolic - when there is proteinemia

   (3)   Both (1) and (2)

   (4)   None of the above

56. All of the following statements are true **except** :

   (1)   Bariatric surgery is recommended if BMI > 35 kg/m^2

   (2)   Medications for treatment of obesity currently approved for use in adult who have BMI $\geq$ 27 kg/m^2 with obesity related medical condition like HTN, DM, Hyperlipidemia, sleep apnea or arthritis or BMI of 30 kg/m^2 or higher

   (3)   Currently 2 drugs, orlistat and sibutramine are approved for long-term treatment of obesity

   (4)   Rimonabant - an endocannabinoid receptor blocker has not yet been approved by FDA because of serious side effects

57. Cardiovascular Disease (CVD) was the leading cause of death among women worldwide in 2001. It accounted for :

   (1)   26.9% of all estimated mortality among women compared to 32% among men.

   (2)   15.5% of all estimated mortality among women compared to 23% among men.

   (3)   32% of all estimated mortality among women compared to 26.9% among men.

   (4)   23.1% of all estimated mortality among women compared to 15.5% among men.

58. All of the following statements are correct **except** :

    (1) Gradual changes in hormone levels related to menopause have been implicated in the rapid rise in CAD risk in women with increasing age and hormone

    (2) HRT should be initiated for prevention of CVD in postmenopausal women

    (3) Cholesterol lowering drugs are preferable to HRT for CAD risk reduction in women

    (4) It may be prudent to prescribe statins to all women receiving HRT irrespective of their lipid levels

59. AHA recommended the global risk assessment for CAD to be started around the age of :

    (1) 14 years   (2) 20 years   (3) 25 years   (4) 40 years

60. The most important cardiovascular disease leading to death and disability is :

    (1) Hypertension   (2) Rheumatic heart disease

    (3) Atherosclerotic disease of CVS   (4) Cardiomyopathy

61. All the following are non - modifiable risk factor for CAD except :

    (1) Dyslipidemia   (2) Heredity   (3) Sex   (4) Age

62. Which is **not** correct regarding trans fats ?

    (1) Increase LDL cholesterol

    (2) Increase HDL Cholesterol

    (3) Promote Platelet aggregation thrombosis

    (4) Raise triglyceride level

63. What is the prevalence of CAD among diabetic patients ?

    (1) 50 - 55%   (2) 30 - 40%   (3) 20 - 25%   (4) 10 - 15 %

64. What percentage of patients with acute MI die within hours if they do **not** get immediate medical attention ?

    (1) 30 - 40%   (2) 20 - 25%   (3) 15 - 20%   (4) 10 - 15%

65. Amino acid associated with atherosclerosis is :

(1) Lysine   (2) Homocysteine   (3) Cysteine   (4) Alanine

66. Most important predictor of CAD is :

(1) LDL

(2) VLDL

(3) LDL/HDL

(4) Chylomicrons

67. Treatment of unstable angina are all **except** :

(1) IV Heparin

(2) IV Nitrates

(3) Antiplatelets

(4) Head and elevation and backrest

68. Premature CAD refers to :

(1) Men < 55, women < 65

(2) Men < 50, women < 60

(3) Men < 60, women < 70

(4) Men < 45, women < 55

69. Fatty streaks starts at the age of :

(1) 10 years   (2) 20 years   (3) 30 years   (4) 40 years

70. Streptokinase is contraindicated in :

(1) Intracranial Malignancy

(2) A-V fistula

(3) Pulmonary apoplexy

(4) Thrombophlebitis

71. Incidence of coronary artery disease in urban area in 2000 was :

(1) 9 %   (2) 10 %   (3) 10.5 %   (4) 11.5 %

72. The most toxic component of Type A personality is :

(1) Competitive behaviour

(2) Sense of time urgency

(3) Hostility

(4) Impatience

73. WOSCOPS study :

    (1) Was a secondary prevention study

    (2) Was a primary prevention study in subjects with high cholesterol

    (3) Was a primary prevention study in subjects with low cholesterol

    (4) Studied ACE inhibitors as an intervention

74. Framingham risk scoring system includes all **except** :

    (1) Systolic blood pressure   (2) Age

    (3) Gender   (4) Metabolic syndrome

75. True regarding smoking is all except :

    (1) Smoking causes endothelial injury

    (2) Smoking decreases heart rate

    (3) Smoking decreases oxygen level in blood

    (4) Smoking increases platelet aggregation and promotes blood clotting

76. Coronary artery disease equivalents are all **except** :

    (1) Transient ischaemic attacks   (2) Diabetes Mellitus

    (3) Hypertension   (4) Peripheral artery disease

77. What percentage of gross domestic product (GDP) is spent on health in India ?

    (1) 10%   (2) 2%   (3) 5%   (4) 12%

78. Good carbohydrates are all the following **except** :

    (1) Brown rice   (2) Whole bread   (3) Pasta   (4) Table sugar

79. Which one of the following is a primary prevention trail ?

    (1) 4S   (2) CARE   (3) LIPID   (4) WOSCOPS

80. Coronary calcification is the earliest sign of :

    (1) Coronary artery disease   (2) Diabetes

    (3) Hypertension   (4) Tuberculosis

81. Newer risk factors for CAD are all **except** :

    (1) Left ventricular hypertrophy   (2) Hyperhomocysteinemia

    (3) Oxidative stress   (4) Hypertension

82. Types of prevention includes **except** :

    (1) Primordial prevention   (2) Primary prevention

    (3) Tertiary prevention   (4) Secondary prevention

83. Bad carbohydrates includes all **except** :

    (1) Table sugar   (2) Candy   (3) Glucose drink   (4) Atta

84. Total dietary fibres recommended per day is :

    (1) 10 - 20 gm/day   (2) 15 - 30 gm/day

    (3) 27 - 40 gm/day   (4) 40 - 60 gm/day

85. Lack of exercise could be as bad as smoking how many cigarettes per day ?

    (1) 5 cigarettes/day   (2) 10 cigarettes/day

    (3) 15 cigarettes/day   (4) 20 cigarettes/day

86. Non - pharmacological measures for control of hypertension are all the following **except** :

    (1) Reduction of overweight   (2) Reduction of salt intake

    (3) Stoppage of smoking   (4) Antihypertensive drugs

87. Following are useful methods for relieving stress **except** :

    (1) Meditation (2) Yoga

    (3) Biofeedback (4) Reduction in salt intake

88. Non-conventional risk factors for CAD in Indians are :

    (1) Insulin resistance (2) Smoking

    (3) Obesity (4) Hypertension

89. Following are important factors determining the glycemic index of food **except** :

    (1) How highly processed its carbohydrates are

    (2) Fiber content

    (3) Ripeness

    (4) Vitamins

90. Patients with peripheral artery disease with hypertension drug of choice for hypertension is :

    (1) ARBs (2) ACEI

    (3) CCB (4) Beta blockers