

METABOLIC & NUTRITIONAL DISORDERS

1. A 57 years old man is admitted to the hospital for treatment of chronic pancreatitis. In patients with chronic pancreatitis, deficiency of which of the following vitamins is most likely?

- a. Folic acid
- b. Vitamin B2 (riboflavin)
- c. Vitamin B6 (pyridoxine)
- d. Vitamin B12 (cobalamin)
- e. Vitamin D

2. A multiparous 60 year old woman having 'full parda' for religious reasons, presents with severe aches and pains, unable to stand from sitting position with numbness and tingling around mouth. Which of the following deficiency is the cause?

- a. Potassium b. Zinc c. Iron
- d. Vitamin D e. Vitamin B12

3. A 4 year old man living presents to a clinic with impaired memory, diarrhea and a rash on face, neck and dorsum of the hands. It is likely that this patient has a deficiency of which of the following nutrients?

- a. Ascorbic acid
- b. Folic acid
- c. Homocysteine
- d. Niacin
- e. Alpha Tocopherol (vitamin E)

4. A 37 year old woman has diarrhea. She also complains of painful tongue and recurrent mouth infections. On examination her tongue is red. She has chronic thickening, dryness and pigmentation of the skin in the sun exposed areas. Which of the following is the best option for treatment?

- a. Pyridoxine therapy b. Thiamine
- c. Riboflavin therapy d. Nicotinamide
- e. Ascorbic acid

5. A 14 year old man living presents to a clinic with impaired memory, diarrhea and a rash on the face, neck and dorsum of the hands. It is likely that this patient has a deficiency of which of the following nutrients?

- a. Ascorbic acid
- b. Folic acid
- c. Homocysteine
- d. Niacin
- e. Alpha Tocopherol (Vitamin E)

6. A 54 year old man living presents to a clinic with impaired memory, diarrhea and a rash on the face, neck & dorsum of the hands. It is likely that this patient has a deficiency of which of the following nutrients?

- a. Ascorbic acid
- b. Folic acid
- c. Homocysteine
- d. Niacin
- e. Alpha-Tocopherol (vitamin E)

7. A 64 years old man undergoes a total gastric resection for adenocarcinoma of the stomach. He has done well for 4 years but now presents with profound anorexia, fatigue, and vague neurological complaints. Position and vibration sensation are markedly diminished and hyperreflexia is pronounced. Laboratory studies including examination of the bone marrow, reveal pancytopenia and other findings compatible with megaloblastic anemia. He is likely suffering a deficiency of which essential vitamin?

- a. Folate
- b. Vitamin B12
- c. Vitamin C
- d. Vitamin D
- e. Vitamin K

8. A 65 year old known alcoholic is brought into hospital with confusion, aggressiveness and ophthalmoplegia. He is treated with diazepam. What other drug would you like to prescribe?

- a. Antibiotics
- b. Glucose
- c. IV Guide
- d. Disulfiram
- e. Vitamin B complex

9. In subacute combined degeneration of the cord, which of the following deficiency is responsible

- a. Vitamin B1
- b. Thiamine
- c. Vitamin B12
- d. Folic Acid
- e. Vitamin D

10. A 64 years old man undergoes a total gastric resection for adenocarcinoma of the stomach. He has done well for 4 years but now presents with profound anemia, fatigue, and vague neurologic complaints. Position and vibration sensation are markedly diminished and hyporeflexia is pronounced. Laboratory studies including examination of the bone marrow, reveals pancytopenia and other findings compatible with a megaloblastic anemia. He is likely suffering a deficiency of which essential vitamin?

- a. Folate
- b. Vitamin B12
- c. Vitamin C
- d. Vitamin D
- e. Vitamin K

11. A known case of Chronic Myeloid Leukemia who is on chemotherapy presented with a red swollen and tender big toe. What is your diagnosis

- a. Rheumatoid arthritis
- b. Gout (podagra)
- c. Septic arthritis
- d. Osteomyelitis
- e. None of the above

1. ANEMIA

12. A 62 year old woman with a long history of rheumatoid arthritis was recently placed on therapy with methotrexate. The physician should be on the alert for which of the following side effects of this newly added medication?

- a. Defective osteoid matrix production
- b. Hemorrhagic lesions of the mammillary bodies
- c. High output heart failure
- d. Impaired wound healing
- e. Megaloblastic anemia

13. Macrocytic anemia is caused by deficiency of:

- a. Iron
- b. Vitamin C
- c. Zinc
- d. Copper
- e. Vitamin B1

14. In a patients with chronic renal failure the anemia is due to the following causes

- a. Low erythropoietin level
- b. Acidosis
- c. Abnormal platelets function
- d. Hyperkalemia
- e. Hemolysis

15. Which of the following is required in treating a patient with anemia and MCV of 60 fl (76-98 fl) and transferrin saturation of less than 10% (30-50%)

- a. Vitamin B12
- b. Folic acid
- c. Iron
- d. Thiamine
- e. Zinc

16. A 62 year old woman with a long history of rheumatoid arthritis was recently placed on therapy with methotrexate. The physician should be on the alert for which of the following side effects of this newly added medication?

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17. An 18 years old young man with known cystic fibrosis presents to the physician with ble third episode of kidney stones in the past year. In addition he has begun to complain of difficulty seeing at night. Such changes can be attributed to a deficiency of which vitamin?

- a. Pyridoxine
- b. Vitamin A
- c. Vitamin B1
- d. Vitamin B12
- e. Vitamin D

18. A 40 years old alcoholic reported to A and B WITH CONFUSION ATAXIA and lateral gaze nystagmus, What is your diagnosis out of the following options:

- a. Beri beri
- b. Pellagra
- c. Wernick's Encephalopathy
- d. Biotin deficiency
- e. Cerebellar infarction

19. While working with an International group of physicians to administer polio vaccine, a medical student sees several children with abdominal distention and pale streaks in the hair and skin. cursory physical examination reveals significant hepatomegaly. The children likely suffer from ?

- a. Anorexia
- b. Beriberi
- c. Bulimia
- d. Kwashiorkor
- e. Marasmus

20. A 52-year-old recent Afghan refugee is brought to the emergency department after experiencing several convulsions. Further history reveals that she has been diagnosed with tuberculosis and has recently been started on a multidrug regimen that includes Isoniazid. Which of the following is the likely cause of her convulsions?

- a. Vitamin B1 (thiamine) deficiency
- b. Vitamin B2 (riboflavin) deficiency
- c. Vitamin B3 (niacin) deficiency
- d. Vitamin B6 (pyridoxine) deficiency
- e. Vitamin C (ascorbic acid) deficiency

21. Purpuric skin rash is common in which of the following deficiencies

- a. Vitamin B12
- b. Vitamin B6
- c. Vitamin B1
- d. Nicotinic acid
- e. Vitamin C

22. A patient presents with swollen and bleeding gums with normal bleeding time. Which is the appropriate treatment?

- a. Platelets
- b. Fresh Frozen Plasma
- c. Vitamin K
- d. Zinc
- e. Vitamin C

23. Which one of the following is not a recognised clinical feature of vitamin C deficiency (Scurvy)?

- a. Swollen and bleeding gums
- b. Perifollicular hemorrhages
- c. Ecchymoses
- d. Generalized lymphadenopathy
- e. Poor wound healing

24. An elderly man with painful legs was found to have the following bone profile: Calcium 2.15 mmol/l, Phosphate 1.1 mmol/l, Alkaline phosphatase 1090 iu/l. What is the most likely diagnosis?

- a. Osteoporosis
- b. Osteomalacia
- c. Pancreatitis
- d. Paget's disease
- e. Chronic renal failure

25. A 30 years old woman with backache having serum calcium of 1.8 mmol/l, phosphate 0.6 mmol/l and alkaline phosphatase 340 iu/l. What is the most likely diagnosis?

- a. Osteoporosis
- b. Primary hyperparathyroidism

- c. Secondary hyperparathyroidism
- d. Osteomalacia
- e. None of the above

26. The metabolic profile of a 60 years old patient shows the following low calcium, low phosphates, raised alkaline phosphatase, low 25(OH)D and raised PTH. What is the most likely diagnosis?

- a. Paget disease of bone
- b. Osteomalacia
- c. Rickets
- d. Osteoporosis
- e. Osteogenesis imperfecta

27. The clinical consequence of hypercalcemia include

- a. Peptic ulceration
- b. Diabetes mellitus
- c. Backaches
- d. Fever
- e. Leg pains

28. Hypercalciuria without hypercalcemia occurs in

- a. Secondary hyperparathyroidism
- b. Acidosis
- c. High calcium intake
- d. Osteomalacia
- e. Hydrochlorothiazide therapy

29. In a young man presenting with a single acutely inflamed joint, which of the following metabolic abnormalities is most likely responsible?

- a. High Calcium
- b. High Sugar Level
- c. High Cysteine Level
- d. High Uric acid
- e. High Cholesterol

30. Chronic hypercalcemia is associated with which of the following complications

- a. Hypertension
- b. Peptic ulcer

- c. Renal stones
- d. Depression
- e. All of them

1. Each of the following enzymatic defects is known to productive hyperuricemia except

- a. Hypoxanthine-guanine phosphoribosyl transferase (HGPRT) deficiency
- b. Muscle phosphorylase deficiency
- c. Glucose-6-phosphatase deficiency (G6PD)
- d. Phosphoribosyl pyrophosphate synthetase abnormalities B.
- e. Partial HPRT deficiency

32. A 27 year old female presents to us with acute abdomen, seizures, numbness in her hands, high blood pressure and tachycardia after a day fast. The patient also complains of her urine turning red standing. The patient has had similar episodes in the past and also her mother suffers from a similar condition. What is the most likely diagnosis?

- a. Acute intermittent Porphyria
- b. Acute appendicitis
- c. Torsion ovarian cyst
- d. Ectopic pregnancy
- e. Meckel's diverticulum

33. A 35 year old woman presented with odd behavior and difficulty in walking. She also complains of weakness, numbness and pins and needles in both feet. On examination the ankle jerk reflexes are lost and eventually all the signs of polyneuropathy are found. What is the likely diagnosis?

- a. Dry beri beri
- b. Vitamin B12 deficiency
- c. Vitamin B6 deficiency
- d. Vitamin E deficiency
- e. Vitamin B1 deficiency

34. Each of the following is true of cystic fibrosis EXCEPT

- a. it is characterized by repeated pulmonary infections, malabsorption, and an increased risk of intestinal obstruction due to intussusception
- b. diagnosis is confirmed by an elevation in the concentration of sodium and/or chloride in sweat
- c. because of the recent linkage of the cystic fibrosis gene to genetic markers on the long arm of chromosome 7, prenatal diagnosis is now available for all patients at risk
- d. the major morbidity and mortality are associated with pulmonary infections and the resultant cor pulmonale
- e. it is the most common autosomal disease in the white population in the United States

35. Which of the following is not true regarding Phytanic Acid Storage (Refsum's) Disease?

- a. Enhanced synthesis of Phytanic acid
- b. Peripheral neuropathy
- c. Failure to oxidize Phytanic acid
- d. Accumulation of exogenous Phytanic acid
- e. Retinitis pigmentosa

36. The major risk factor for ischemic Heart Disease (IHD) is a high value of

- a. LDL
- b. VLDL
- c. TG
- d. Total Cholesterol
- e. HDL

37. Each of the following statements is true about polycystic kidney disease EXCEPT

- a. There is an associated hepatic fibrosis
- b. the disease is inherited as an autosomal dominant trait
- c. approximately 10% of affected patients have cerebral aneurysms

- d. onset of clinical symptoms is usual in the fourth decade and renal dialysis and/or transplant is necessary by the fifth decade
- e. It is the most common form of inherited kidney disease in the adult

38. What percentage of autosomal genes do a boy and his maternal aunt have in common?

- a. 5%
- b. 12.5%
- c. 25%
- d. 33%
- e. 50%

39. Tourette syndrome is a common neuropsychiatric disease associated with chronic tics and vocalizations. Each of the following statements is true EXCEPT

- a. it is inherited as a multifactorial disease
- b. no more than 30% of the patients have coprolalia
- c. patients characteristically have problems with discipline and are prone to anger and violence
- d. haloperidol is the therapeutic drug of choice
- e. Onset is most commonly in the first decade of life

40. Which of the following corresponds to the karyotype 47XX+21?

- a. Down's syndrome
- b. Noonan's syndrome
- c. Klinefelter's syndrome
- d. Bloom's syndrome
- e. Turner's syndrome

41. Different alleles of N-acetyltransferase result in two different human phenotypes that differ in their ability to acetylate and metabolize certain drugs, including each of the following EXCEPT

- a. Isoniazid
- b. hydralazine
- c. salicyl-azo-sulfapyridine
- d. dapsone
- e. phenytoin

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42. A newborn infant of unaffected 26-year-old parents died recently in a hyperammonemic coma and was diagnosed as having ornithine carbamyl transferase deficiency (OCT). The mother is again pregnant and comes to you for counseling. Which of the following is correct?

- a. The best available option at this time is prenatal diagnosis and elective abortion
- b. The mother should be treated with sodium benzoate and restriction of dietary protein during pregnancy
- c. Fifty per cent of her sons but none of her daughters will be at risk of having OCT
- d. The neonate should be treated with sodium benzoate and restriction of dietary protein
- e. Metabolic acidosis is characteristically seen after treatment of neonatal hyperammonemia

1.E	2.D	3.D	4.D	5.D	6.D
7.B	8.E	9.C	10.B	11.B	12.E
13.B	14.A	15.C	16.E	17.B	18.C
19.D	20.D	21.E	22.E	23.D	24.D
25.D	26.B	27.A	28.A	29.D	30.E
31.B	32.A	33.B	34.C	35.A	36.
37.A	38.C	39.A	40.A	41.E	42.D