Pediatrics Department
Examination for MD Degree (Commentary)
Course Title: pediatrics (paperIII)
Date: 13/11/ 2021
Time allowed: 1.5 hours

TANTA UNIVERSITY
Faculty of Medicine

Total assessment: 200 Marks

An 8-day-old baby girl born at 37 weeks of gestation to a previously healthy mother via spontaneous vaginal delivery. There were no complications during pregnancy or birth. The patient was brought to the hospital with a 2-day history of lethargy, poor oral intake and jaundice. Physical examination showed that the patient was in respiratory distress. In turn, she was placed on continuous positive airway pressure (CPAP) and admitted to the neonatal intensive care unit (NICU). Laboratory findings on admission revealed significant hyperbilirubinemia with a total bilirubin of 31.5 mg/dL and direct bilirubin of 2.4 mg/dL which required intensive phototherapy . The patient's condition rapidly deteriorated over 24 hours, with worsening lactic acidosis and coagulopathy. Electroencephalogram (EEG) confirmed seizure activity. An abdominal x-ray showed free air in the abdomen, suggesting abdominal compartment syndrome. Hence an exploratory laparotomy was done; however, no evidence of bowel ischemia or perforation was noted. The decision was made to leave the abdomen open and to place the intestines in a silo bag to assist in resuscitation. Work-up for possible sepsis was pursued, and empiric treatment with broad-spectrum antibiotics and antiviral therapy was initiated. However, the patient's condition continued to deteriorate with refractory hyperkalemia (>8 mEq/L), cardioplegia, and cardiogenic shock. Due to worsening multi-organ failure, the patient was transferred to a tertiary care center on the same day for further management.

On arrival to the tertiary care center, the patient developed profound hypotension and was placed on three vasopressors. Repeat EEG confirmed seizure activity and severe encephalopathy. Ultrasound of the brain showed increased echogenicity of the bilateral basal ganglia. Laboratory findings revealed prolonged prothrombin time (PT) of 70.8 seconds , and prolonged partial thromboplastin time (PTT) of 117.1 seconds, international normalized ratio (INR) of 8.26, serum ferritin > 21,500 ng/mL, lactate dehydrogenase (LDH) of 19,265 IU/L, total bilirubin of 7.5 mg/dL, conjugated bilirubin of 3.3 mg/ dL, unconjugated bilirubin of 3.9 mg/dL, alanine transaminase of 210 IU/L, aspartate aminotransferase of 1,873 IU/L, and alkaline phosphatase of 270 IU/L.

Examination for MD Degree
Course Title: pediatrics (paperII)
Date: 6/11/ 2021
Time allowed: 3hours
All Questions should be tried

TANTA UNIVERSITY
Faculty of Medicine
Pediatric Department

Total assessment: 260 Marks

Long Essay

Q1: Infections associated with medical devices and equipments. (50 marks)

Short Essay

Q2: Give a brief account on hypoaldosteronism. (25 marks)

Q3: Give a short account on hypophosphatasia. (25 marks)

Q4: Characteristic stigmata of Myeloid leukemia in Down syndrome. (25 marks)

Q5: Pediatric Non-Alcoholic Fatty Liver Disease (NAFLD). (25 marks)

Q6: Differential diagnosis of Torticollis. (25 marks)

Q7: Adverse reactions to foods (25 marks)

Q8: MCQs, *(3 marks for each question):*

1. As regard to leptin hormone, all the following are not true Except:

A. It regulates pituitary growth hormone secretion.
B. It creates an euphoric feeling when an individual is eating.
C. It induces the release of insulin in presence of increased blood glucose.
D. It inhibits appetite in satiated individuals.

2. As regard to Autoimmune Polyendocrinopathy Syndrome-Type 2, all the following are not cardinal feature for diagnosis Except :
A. Adrenal insufficiency
B. Type 1 DM
C. Hyperparathyroidism
D. Autoimmune hepatitis

3. In cases of DKA, all the following are true Except:
A. Acetone in blood does not contribute to the occurring acidosis
B. Total ketone concentrations in blood may reach more than 30 mM/L
C. Blood levels of Beta-hydroxybutyrate to acetoacetate ratio may reach up to 15 to 1 in severe cases
D. After correction of DKA, Beta-hydroxybutyrate stop conversion to acetoacetate.

4. A child was brought to a clinic by her mother with history of craving for salt, weakness, muscle-wasting, and hyperpigmentation (in face, hand) for the last 3 months. Mother also noticed that suntan does not disappear on her body. Physical examination reveals hypotension, several hyperpigmented spots over the face, hands, and genitalia. Which of the following serum electrolyte results appropriate for this disease condition?
A. Normal Na, normal Cl, normal K, normal renin
B. Normal Na, low Cl, normal K, normal renin
C. Low Na, low Cl, normal K, normal renin
D. Low Na, low Cl, high K, high renin

5. A 6-year-old male child appears with history of fever (103°F) and sore throat, then develops vomiting and diarrhea with dark brown stools. Stools have no occult blood. Physical examination reveals pale, puffy eyelids, and diffuse abdominal tenderness. Laboratory findings reveal BUN 80, sodium 128, hematocrit 36, WBC count 16,500, polymorphs 70%, lymphocytes 25%, monocytes 5%, and platelet count 246,000. Most likely diagnosis:
A. Hemolytic uremic syndrome
B. Acute appendicitis
C. Acute pharyngitis
D. Acute poststreptococcal glomerulonephritis

6. The following statement is not true about voiding cystourethrogram (VCUG) studies:

A. A contrast VCUG study is not recommended for boys with hydronephrosis for the initial work-up

B. A radionuclide VCUG study has less radiation effects on gonads than that of contrast VCUG.

C. A radionuclide VCUG study determines the accurate grading of the reflux.

D. A radionuclide VCUG study does not give anatomic definition of the urinary bladder.

7. All of the following are complications of recombinant human erythropoietin therapy except:

A. Seizures

B. Hypotension

C. Iron deficiency

D. Pure red cell aplasia

8. The following is correct regarding Wilms tumour

A. Most cases of wilms tumour are not a part of genetic syndromes with no family history but occurs by chance and results from genetic mutations affecting renal cell growth.

B. Most cases of wilms tumour are a part of genetic syndromes with positive family history and results from genetic mutations affecting renal cell growth.

C. Most cases of wilms tumour are born with genetic mutations that predisposes to cancer.

D. 20% of patients of wilms tumour have relative with of wilms tumour and it is more common among some siblings and twins.

9. The following is correct regarding neuroblastoma

A. It is the most common neonatal tumour and accounts for 30-40% of neonatal tumours.

B. It is the most common neonatal tumour and accounts for more than 70% of neonatal tumours.

C. It is rare neonatal tumour and accounts for only 2% of neonatal tumours.

D. The most common site of neuroblastoma is cervical sympathatic chain constituting about 50%.

10. All of the following are true regarding clinical manifestations of sickle cell anemia except

A. Affected newborn seldom exhibit clinical features of the disease

B. Acute sequestration has peak incidence between 6 months and 3 years

C. Stroke is more common below 3 years

D. Sickle dactylitis is often first overt evidence of sickle cell disease in infants

11. A 6-year-old girl with failed Kasai operation underwent liver transplantation with Roux-en-Y choledochojejunostomy for biliary reconstruction. Her liver function test results at the time of discharge were normal. The patient remained for 3 months until it was noticed that she presented with elevated bilirubin, alkaline phosphatase, and transaminase levels. Acute rejection versus biliary obstruction was considered. Percutaneous liver biopsy showed no rejection but there were manifestations suggestive of biliary obstruction. What is the next step in management of this patient?

A. Percutaneous transhepatic cholangiography

B. MRCP

C. ERCP

D. HIDA scan

12. Which of the following statements regarding the inherited cholestatic disorders is false?

A. Patients with PFIC1 may present with severe failure to thrive and watery diarrhea that persists post-liver transplantation.

B. The molecular defect in Alagille syndrome is vesicle sorting and trafficking.

C. The molecular defect in MDR3 deficiency is transport of phospholipid into bile.

D. The molecular defect in PFIC2 is bile acid transport.

13. Which of the following statements regarding sclerosing cholangitis is false?

A. Patients with primary sclerosing cholangitis (PSC) are at increased risk of developing cholangiocarcinoma.

B. PSC does not recur after liver transplantation.

C. Unlike adults, children may present with an autoimmune sclerosing cholangitis syndrome that is responsive to immunosuppression.

D. *Cryptosporidium parvum* infection is associated with the development of sclerosing cholangitis in children with immunodeficiency.

14- A neonate who has developed conjunctivitis is being evaluated in the neonatal intensive care unit (NICU). During the past 2 weeks, 3 premature infants in the NICU were diagnosed with conjunctivitis after a routine evaluation by the ophthalmologic consultant team for retinopathy of prematurity. One week later, 2 of the nursing staff and a pediatric resident caring for some of the NICU infants developed red eyes with watery discharge, photophobia, and a gritty sensation in their eyes. Infection control was consulted and identified an additional 8 infants in the NICU with conjunctivitis. Of the following, the MOST likely pathogen causing this outbreak is

A. Adenovirus
B. Chlamydia trachomatis
C. Herpes simplex virus
D. Respiratory syncytial virus

15-A previously healthy 7-year-old boy is brought to the emergency department (ED) for evaluation. He has had diarrhea for the last 8 days and bloody diarrhea for 2 days. He has become increasingly listless over the past several hours. He has no known previous medical problem. Physical examination reveals an ill-appearing child, with marked pallor and periorbital edema. Of the following, the A complete blood cell count with smear test MOST likely to confirm the boy's diagnosis is

A. Complete blood cell count with smear
B. Serum electrolyte panel
C. Stool culture
D. Urinalysis

16- A 17-year-old adolescent boy reports a history of severe obesity for which he underwent bariatric surgery 2 years ago. He reports that he has lost 75 lbs since his surgery and maintains an active and healthy lifestyle. Today his main concerns are hair thinning on the scalp, eyebrows, and eyelashes; areas of dry, red, and scaling skin; sores on the side of his mouth; and changes in his ability to taste. Of the following, the mineral MOST likely to be deficient in this patient is

A. Chromium
B. Copper
C. Magnesium
D. Zinc

17-A 5-year-old boy presents with a 1-day history of vomiting and watery diarrhea without blood or mucus. Several of his school friends have become ill with diarrhea. He and his friends had recently visited a large city park with a wading pool. His physical examination is notable only for evidence of mild dehydration. Laboratory investigation reveals the presence of fecal leukocytes, but heme-negative stools. Of the following, the MOST likely cause of this boy's diarrheal illness is

A. Bacillus cereus
B. Campylobacter jejuni
C. Enterotoxigenic Escherichia coli
D. Shigella sonnei

18- The MOST common electrolyte abnormality in acute intermittent porphyria is
A. Hyperkalemia
B. Hyponatremia
C. Hypercalcemia
D. Hypomagnesemia

19- A3-year-oldboy presented with recurrent attacks of pneumonia and otitis media since the first birthday. Your diagnosis is X-linked agammaglobulinemia. 0f the following, the MOST likely offending organism is
A. CMV
B. Mycoplasma
C. Pneumocystis jiroveci
D. Streptococcus pneumonia

20. A 17-month-old girl presented with history of recurrent attacks of pneumonia since the age of 8 months. You suspect a predominant B-cell defect. Of the following, the BEST simple initial screening test is
A. IgA measurement
B. IgG measurement
C. IgM measurement
D. Isohemagglutinins titer

----------Good Luck----------

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Department : Pediatric MD Degree
Subject : : Pediatrics (Paper I)
Time Allowed : 3hours
Date: 30/10/ 2021

Total assessment: 260 Marks

All Questions should be tried

Long Essay

Q1: Granulomatous Lung Disease **(50 marks)**

Short Essay

Q2: Amyloidosis. **(25 marks)**

Q3: Childhood Dyslexia. **(25 marks)**

Q4: Household poisoning and drug accidents. **(25 marks)**

Q5: Autoimmune encephalopathies associated with epilepsy and status epilepticus. **(25 Marks)**

Q6: Sick sinus syndrome. **(25 marks)**

Q7: Genetic disorders with photosensitivity. **(25 marks)**

5. All of the following are manifestations of septo-optic dysplasia EXCEPT:

(A) Nystagmus

(B) Visual impairments

(C) Optic nerve dysplasia

(D) Large anterior pituitary gland

6. Respiratory acidosis occurs in:

(A) Severe anemia

(B) Carbon monoxide poisoning

(C) Hypophosphatemia

(D) Hypotension

7. A patient with a spinal cord injury (SCI) complains about a severe throbbing headache that suddenly started a short time ago. Assessment of the patient reveals increased blood pressure (168/94) and decreased heart rate (48/minute), diaphoresis, and flushing of the face and neck. What action should you take first?

(A) Administer the ordered acetaminophen (Tylenol).

(B) Check the Foley tubing for kinks or obstruction.

(C) Adjust the temperature in the patient's room.

(D) Notify the physician about the change in status.

8. Bacterial tracheitis is characterized by all the following EXCEPT:

(A) Staphylococcus aureus is the most isolated pathogen

(B) Incidence and severity do not differ by sex

(C) Mean age is between 5 and 7 years

(D) Considered a primary bacterial illness

13. Which of the following is not among the diagnostic criteria for neurofibromatosis Type I:

(A) Presence of two or more iris Lisch nodules.

(B) Presence of sphenoid dysplasia.

(C) Presence of optic glioma.

(D) Presence of vestibular schwannoma.

14. The preferred screening test for patients with a chronic granulomatous disease is:

(A) G6PD qualitative assay

(B) RBC G6PD activity

(C) Dihydrorhodamine 123 fluorescence (DHR) test

(D) Ability of neutrophils to kill microorganisms

15. The ducal dependent systemic blood flow are the following EXCEPT:

(A) Critical aortic stenosis

(B) Coarctation aorta

(C) Interrupted aortic arch

(D) Hypoplasia right heart syndrome

16. A 2-day-old full term female newborn appears with poor feeding and dyspnea. Physical examination revealsblood pressure 35/20, respiratory rate 70 per minute, temperature 98.6°F, weak peripheral pulses, grayish bluecolor of skin, hepatomegaly, and right ventricular heave. Most likely diagnosis:

(A) Aortic stenosis

(B) Coarctation of aorta

(C) Hypoplastic right heart

(D) Hypoplastic left heart syndrome