

Examination for Diploma in: Neonatology /Health Care
Course Title: Pediatrics
Date: May 31, 2021 (Paper III)
Time allowed: 3 Hours
Total Assessment Marks: 100 (4 Pages)



Tanta University
Faculty of Medicine
Department of Pediatrics

All questions should be tried

Neonatology (75 marks)

Q1) Long essay: (15)

Discuss neonatal anemia

Q2) Short essay:

Give short notes about the following: **(3 for each one)**

1. Causes of neonatal AKI
2. Neonatal cranial birth injuries
3. Causes of Neonatal obstructive shock
4. Heated humidified high flow nasal cannula
5. Complications of parenteral nutrition

Q3) Short answer: Mention: (3 for each one)

1. Surfactant replacement therapy
2. Pharmacologic therapy of neonatal apnea
3. Criteria of blood used for exchange transfusion
4. Causes of neonatal seizures
5. Risk factor for NEC

Q4) Problem Solving: (3 for each one)

A) 1 week old infant presents with periodic breathing, RR 55-60/min, large pale blue lesion over the buttocks bilaterally. The lesion is not palpable and it is not warm or tender. The mother denies trauma and reports that the lesion has been present since birth.

- 1- What is the most appropriate diagnosis?
- 2- What is the pathophysiology of this condition?
- 3- How to manage this case?

B) A 5-week-old boy presents to clinic with vomiting for the last 2 weeks. He is not gaining weight properly. The mother states the vomiting is projectile, non-bilious but she feels that he has a good suck and swallow. Examination revealed an olive-like mass felt to the right of umbilicus

- 1- What is the most appropriate diagnosis?
- 2- Mention investigations need to be done
- 3- Mention 2 differential diagnosis for this condition

C) A baby is born at 26 weeks' gestation and requires ventilation for eight days. Oxygen requirements have been decreasing after the first week, but over the next 24 hours there is a need to increase the fraction of inspired oxygen (FiO_2) and pressure settings on the ventilator. There is no evidence of sepsis. Examination reveals a long systolic murmur with full femoral pulses, and a chest radiograph shows a large heart with increased pulmonary markings.

- 1- What is the cause of increase oxygen requirement?
- 2- How to confirm the problem?
- 3- Mention lines of treatments could be required?

D) A male infant is noted to have a small mandible and a cleft palate shortly after birth. He has moderate sternal recession and a high pCO_2 on blood gas estimation. Positioning the infant prone reduces his recession and normalizes his pCO_2 .

- 1- What is the suspected diagnosis?
- 2- What are the complications could happen?
- 3- Mention Further management of the case

E) A day 3. boy (2.9 kg) was brought with profound bloody vomiting and rectal bleeding. He was exclusively breastfed with uneventful pregnancy and delivery. There was no family history of any illness and he was born of non-consanguineous marriage. He appears well, alert and active. While in He appears hospital he has another episode of bleeding per oral. There is no bleeding from any other site, fever, foul discharge from any site, pustules, pallor, icterus, external congenital anomaly, petechiae, purpura, bruises, abnormal movements or dysmorphism. There is no organomegaly. Anterior fontanel (AF) is at level. Neonatal reflexes are symmetrical. On admission, Hb 15 gm%, TLC 8,000/cc platelets 225000/cc, liver function is normal, prothrombin time (PT) is 55 second and partial thromboplastin time (PTT) is 65 second

- 1- What is the cause of this bleeding?
- 2- Mention lines for management?
- 3- mention 2 possible complications?

Q5) MCQS:

(2.5 FOR EACH ONE)

1- A 20-year-old primigravida at 30 weeks of gestation has a blood pressure of 160/112 mm hg, serum total bilirubin level of 44.5 μ mol/l (2.6 mg/dl), serum alanine aminotransferase level of 150 u/l, and platelet count of $75 \times 10^9/l$ ($75,000/mm^3$). She is hospitalized for observation and electronic fetal heart rate monitoring. of the following, the most ominous sign of fetal distress during monitoring would be:

- A. early decelerations
- B. increased beat-to-beat variability
- C. late decelerations
- D. spontaneous accelerations

2- A 1.2 kg preterm infant is edematous on examination. The serum Na is 126 & creatinine is 1.4 mg/dl. Urine output for 24 hr is 180 ml. The urine Na is 40 and creatinine is 14mg/dl. The creatinine clearance would be:

- A. 0.2 ml/min
- B. 0.5 ml/min
- C. 1 ml/min
- D. 1.2 ml/min

3-A term infant is treated for PPHN with iNO, 15 ppm. His sats are 88-92% on the right arm. His Hb is 14 and he is G6PD deficient. His MetHb level done to monitor iNO therapy is 9%. His ABG showed a PaO₂ of 190 on 50% O₂. The best way to manage his desturation is to:

- A. give methylene blue
- b. decrease iNO
- c. decrease O₂
- d. obtain echo

4. Sucking and swallowing coordination usually appear in a normal premature newborn (gestational age):

- A. 28 week
- B. 30 week
- C. 32. week
- D. 34 week

5. A newborn male appears with rapid heart rate. He is afebrile. In room air, oxygen saturation is 100% recorded by pulse oxymeter. Heart rate is 260 per minute, respiratory rate is 46 per minute, and temperature is 98.6°F.

Management of this patient includes all of the following except:

- A. Verapamil
- B. Adenosine
- C. Ice pack over face
- D. DC cardioversion

6. The best inotropes for patient with PPHN

- A. Nor adrenaline
- B. Adrenaline
- C. Dobutamoine
- D. Milrinone

Health Care (25 marks)

1) Give Short account on causes of delayed growth and development. (9)

2) What are the contraindications of live attenuated vaccines? (6)

Q3) Problem solving: (6)

8-month-old female infant presented with gastroenteritis and polyuria. She was moderately dehydrated and had generalized hypotonia. Three months earlier, she received iron supplementation and repeated injections of vitamin D over a period of 6 weeks. Laboratory investigations of serum revealed B.urea 105 ,S.creatinine 1.9 albumin of 3.2 g/L, calcium of 3.94 mmol/L, phosphorus of 1.16 mmol/L, and alkaline phosphatase of 109 IU/L. After administration of IV fluids, the blood urea and serum creatinine had normalized, but the serum calcium was still high at 4.0 mmol/L, and serum phosphorus was 1.48 mmol/L.

- 1-What is the possible diagnosis?
- 2-What are the possible differential diagnoses?
- 3-What is the appropriate treatment for this case?

Q4) MCQs: (4)

1. Which of the following onset intervals of severe adverse events following immunization is probably not due to the given vaccine:

- a) Vaccine-associated paralytic poliomyelitis (VAPP) occurring 10 days after OPV.
- b) Febrile seizures occurring 3 days following measles vaccination.
- c) Prolonged crying for 24 hours after DTP vaccination.
- d) Anaphylaxis occurring 7 days after MMR vaccination.

2. An 18-month child is edematous, has a dark desquamating skin rash over most of the pressure points on the body, has very thin reddish hair.

Of the following, what laboratory test is most likely to be present?

- a) serum sodium of 143 meq/L
- b) serum albumin of 2.3 g/dL
- c) serum potassium of 2 meq/L
- d) serum prealbumin of 25 mg/dL

=====Good Luck=====

Chairman of Department
Prof. Abd Elrhman Elmashad

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