Examination for Diploma in: Neonatology /Health Care
Course Title: Pediatrics
Date: November 10, 2020 **(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)**

Q 1) ***Long essay:*** **(15)**

Discuss neonatal Apneas

Q 2) ***Short essay:*** **Discuss in brief:** **(3 for each one)**

a. Bell"s classification of necrotizing enterocolitis
b. Effect of prenatal steroid on preterm neonate
c. Causes of neonatal hypertension
d. Causes of prolonged neonatal unconjugated Hyperbilirubinemia
e. Causes of neonatal hypocalcemia

Q 3) ***Short answer:*** **Mention:** **(3 for each one)**

a. Differential diagnosis of neonatal hypotension
b. Complications of total parenteral nutrition
c. Management of neonatal hyperglycemia
d. Causes of neonatal ascites
e. Ventilator induced lung injury

Q 4) ***Problem Solving:*** **(3 for each one)**

1) A 26 day old preterm infant is receiving expressed breast milk. Mom is a strict vegetarian and refused adding any Vitamin supplement to the milk. The bone profile test obtained on the infant showed Ca 8.5, Phos 3.4 Alk Phos 1200.

A. What is the cause of this finding?
B. Mention management guidelines
C. Mention 2 other risk factors causing this problem

2) Woman with epilepsy controlled on anticonvulsants has break through seizure and delivers a baby vaginally by the assistance of ER staff. The baby looks term and weighs 3.7 kg. During blood draw the infant was noted to have prolonged bleeding. PT is 40 and PTT is 80, platelets are 217 c/mm3.

A. What is the most likely cause of this abnormal lab.
B. How to treat this case
C. Mention 2 Complications of this problem

3) Male infant was born at term (GA 40 2/7 weeks of gestation, BW 3650 g) by vacuum assisted vaginal delivery. Apgar scores were 6, 6 and 7 at 1, 5 and 10 minutes, respectively. Umbilical arterial and venous cord pH values were 7.02 and 7.29, respectively. At 30 minutes of age, the infant was transferred to our institution

because of tachypnea, pallor and a swelling on his head. On admission his vital signs were as follows: heart rate 170 bpm, blood pressure 48/28 mmHg (mean 34 mmHg), respiratory rate 92 breaths per minute, oxygen saturation 99% on room air. On his head, a large, baggy swelling was noted. Blood gas analysis revealed (pH 7.00, pCO2 5.9, base deficit -19.3 mmol/l). His hemoglobin value was 142 g/l and decreased to 100 g/l 12 hours later.

a. What is your diagnosis?
b. How to manage this case?
c. What is the differential diagnosis?

4) 680-g boy was delivered by cesarean section at 26 weeks of gestation. Apgar scores were 5 and 7 at 2 and 5 minutes, respectively. He was intubated in the delivery room and surfactant was administered. Umbilical artery and venous catheters were placed. Severe, refractory arterial hypotension was treated with dopamine, norepinephrine and stress doses of hydrocortisone. Gut priming was started on the first day of life. On the 5th day of life, the abdomen was distended with bluish discoloration of the left upper quadrant. In addition, there was thrombocytopenia and leukopenia but no metabolic acidosis. Abdominal X-ray showed free intraperitoneal air without evidence of pneumatosis or portal vein gas. Triple antibiotics were started. A peritoneal drain was placed in the NICU on the same day, and the infant's condition improved. During the following days, air and fluid continued to drain from the incision (>7ml/24h). Because of increasing intestinal fluid loss laparotomy was performed on the 11th day of life and ileal peroration detected.

a) What is your diagnosis?
b) When you are going to start feeding?
c) Mention 2 expected copmlications

5) A 950 gm 33 wk was born via CS. The pregnancy was complicated by IUGR and PIH. She received propranalol to control her BP. Her GTT was normal. CS was done due to worsening UA Doppler flow. The baby was normal except for submucosal cleft palate. IVF was started via UVC and GIR of 12 mg/kg/min was provided to keep baby's glucose > 45 mg/dl. Endocrinologist recommended some blood tests. The results are Growth hormone 13 ng/ml, TSH 5.2 uIU/ml, cortisol 12 UG/ dl, Insulin 3 uU/ ml

LFT: ALT 34, AST 56, Bili 4

a) What is the most probable cause of hypoglycemia?
b) How you can treat such case?
c) Mention 2 possible metabolic complications in such case

2- Minimal enteral feeding, also called gut priming or trophic feeding, is designed to improve gastrointestinal function and is used frequently in the nutritional management of VLBW neonates. The most accurate statement regarding minimal enteral feeding is that it

a) Increases plasma concentrations of gastrointestinal hormones
b) Is best avoided in infants weighing 500 to 600 gm
c) Is A contraindicated in the presence of indwelling umbilical catheters
d) Prevents necrotizing enterocolitis

3- The ventilator variable most influential in avoiding atelectasis in mechanically ventilated neonates is

a) Inspiratory time
b) Peak inspiratory pressure
c) Positive end-expiratory pressure
d) Tidal volume

4- The MOST common physical finding of the pulmonary exam in BPD is:

A. tachypnea
B. mouth breathing
C. increased anteroposterior diameter of the chest
D. intercostal retractions

5- A 9-day full term baby is admitted to the hospital with lethargy, fever and jaundice. Physical examination reveals hepatomegaly. laboratory results reveal a blood glucose value of 10mg/dl, total and direct bilirubin 15 and 7mg/dl, respectively. elevated liver enzymes. The next day blood culture is positive for gram negative rods. The most likely diagnosis is:

A- Necrotizing enterocolitis.
B- Galactosemia.
C- Neonatal hepatitis.
D- Glycogen storage disease

6. Which of the following is the most common infectious cause of congenital hearing loss?

a. Toxoplasmosis
b. Syphilis
c. Rubella
d. Cytomegalovirus (CMV)

Health Care **(25 marks)**

Q 1) Give a short account on Skeletal (osseous) maturation. (9)

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

Q 3) *Problem solving:* **(6)**

A 5-month-old exclusively breast-fed boy with chronic diarrhea and skin lesions. He was asymptomatic during early neonatal period. Since the age of two months, he has developed diarrhea, erythema and skin erosion mainly on the face (around mouth and eyes), perianal and limbs. His weight was 5.2 kg and his height was 57 cm. He also presented with alopecia and a paronychia. Fungi culture of the nail was positive to Candida Albicans.

1-What is the possible diagnosis?
2-How to confirm this diagnosis?
3-What is the appropriate treatment for this case?

Q 4) *MCQs:*

1. **The result of inappropriately rapid treatment of the severely malnourished child? (2)**
   a) hyperkalemia
   b) hyperphosphatemia
   c) congestive heart failure
   d) renal failure.

2. **Which of the following would be classified as a vaccine severe reaction? (2)**
   a) Anaphylaxis, 5 minutes after receiving influenza vaccination.
   b) Crying, 5 minutes after receiving a DTP vaccination.
   c) Fever 6 hours after MMR vaccination.
   d) Vomiting, 5 minutes after receiving a BCG vaccination

==========**Good Luck**==========

Chairman of Department
Prof. Abd Elrhman Elmashad

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