

## IAP Neonatology Chapter

### IAP Neonatology Fellowship Exam August 2018

#### Theory Paper 2

Time – 3 hours

Total Marks – 100

#### Attempt all questions

1. A 28 weeks pregnant mother is admitted in antenatal ward with history of threatened preterm labor and is likely to deliver. Answer all of the following questions.
  - a. The family had expressed desire for antenatal consultation to know the short and long term risks of morbidity and mortality in such an infant. Elaborate your antenatal consultation discussion plan for this pregnancy. (5)
  - b. What specific interventions you will suggest your obstetric colleague to optimize the outcome of this fetus. (3)
  - c. Discuss the delivery room interventions and management of this infant. (3)
  - d. If this infant develops respiratory distress soon after birth, discuss the respiratory support management plan with evidence base supporting the same (5)
  - e. What criteria will you apply to consider first dose of surfactant in such an infant needing respiratory support? (2)
  - f. When will you consider repeating the dose of surfactant in such an infant? (2)
  
2. A 39 weeks newborn baby with a birth weight of 3400 grams was delivered by LSCS because of prolonged labor. This infant did not cry immediately after birth and required extensive resuscitation including intubation, IPPV and IV adrenaline. Answer all of the following questions
  - a. What are various criteria you will apply to label this child as having perinatal asphyxia? (4)
  - b. Umbilical cord arterial blood gas revealed pH of 6.98, pCO<sub>2</sub> of 50, HCO<sub>3</sub> of 6 and BE of -20. Discuss criteria followed in selection of a case for intervention of therapeutic hypothermia – total body cooling. (4)
  - c. Describe evidence based therapeutic hypothermia management and monitoring protocol. (6)
  - d. Describe clinical and imaging criteria that will help in predicting the long term neurodevelopmental outcome in this infant. (6)
  
3. 18 hours old term baby presents with right focal seizures for 3 minutes in the postnatal ward. Normal antenatal period. Baby was born at 39 weeks gestation to a diabetic mother. Mother was well except a small pustule in the lower lip.
  - a. List all possible causes for seizures in this baby, then list top 2 causes for right focal seizures in this baby. (5)

- b. What are the investigations you would do to diagnose this seizure? What is the indication for MRI in a baby with seizures and when will be the right time to do MRI ? (5)
  - c. Phenobarbitone was given to this baby immediately . However, recurrent seizures lasting for 3 – 5 minutes were noted. What is the second and third line of drug therapy for seizures? (5)
  - d. What further investigations are necessary for refractory seizures (not responding to more than 2 anticonvulsants)? (5)
4. A 27 weeks, 900 grams extremely preterm infant is 2 hours old and is hemodynamically stable on nasal CPAP support of 7cms of water with  $FiO_2$  of 30%
  - a. Calculate fluid intake for this child. (2)
  - b. Suggest and calculate first day Glucose, Protein and Lipid intake for this child. (3)
  - c. What is Calorie Nitrogen Ratio (CNR). (2)
  - d. Write down formula for CNR. (2)
  - e. What is the normal desirable value for CNR? (2)
  - f. When will you initiate minimal enteral nutrition (MEN) in this infant? (2)
  - g. How would advance enteral gavage feed in this infant to reach full volume of enteral feeds? (3)
  - h. What is rescue feeding? (1)
  - i. Describe the evidence base from systematic reviews for role of probiotics in prevention of NEC in preterm infants. (3)
5. A 40 week full tem newborn baby with birth weight of 3.1 kg presents on day 5 of life with history of poor feeding, lethargy, altered sensorium and respiratory distress.
  - a. Enlist all likely causes of this problem. (4)
  - b. On history taking you come to know that this infant is born to parents with 2<sup>nd</sup> degree consanguinity. There is past history of neonatal deaths in extended family with similar presentations. What would be the tests you would order to investigate this child to look for cause? (4)
  - c. Initial tests suggest possibility of inborn error of metabolism- IEM. Provide a flow chart for approach and investigation in a case of IEM. (4)
  - d. Describe emergency steps in stabilization of this baby. (4)
  - e. Discuss investigation and treatment plan of a newborn suspected to have Hyperammonemia due to urea cycle disorder. (3)
  - f. What is the mode of inheritance in Citrullinemia and Ornithine Transcarbamylase deficiency. (1)