Name: _____ Date:_____

**Total Marks:_____/_____=_____%**

**Paediatric Clinician Task-Sharing Final Examination Paper 2**

Please put the name and date on the top of each page in the space provided.

You will have 2 hours 30 minutes for this exam paper.

You should have a calculator and a list of medication and their doses for reference.

Remember to read the questions carefully.

1) A 4-year-old child is receiving IV antibiotics on the ward for pneumonia. He has developed a widespread urticarial rash, swollen lips and wheeze. On your assessment you notice that he is in shock.

   a. List 5 clinical signs of shock (25 marks)

Tachycardia
Tachypnoea
Cold peripheries
Prolonged capillary refill time >3 seconds
Agitation/Anxiety
Reduced conscious level
Reduced urine output
Low blood pressure

   b. What is your diagnosis? (5 marks)

Anaphylaxis or Anaphylactic Shock

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c. What would be your immediate treatment? He weighs 15.7kg. (Please write prescriptions in full) (55 marks)

Stop antibiotic administration

Call for help

Administer 0.15ml or 150micrograms of IM adrenaline 1:1000 (15 marks)

Give oxygen

Salbutamol nebuliser 5mg or salbutamol inhaler 10 puffs via spacer (15 marks)

Give 10ml/kg Ringer's Lactate or Normal Saline – 157ml (10 marks)

Reassess & Close monitoring

d. How many milligrams (mg) are there in 1ml of 1:1000 adrenaline? (5 marks)

1mg

2) An 8yr old girl presents with a 5-day history of high-grade fever, headache and constipation. She has severe abdominal pain and is not drinking well. On examination she is pale and tachycardic but has a normal capillary refill time and a strong radial pulse. She is alert and responding to questions. There is no respiratory distress and on auscultation of her chest there are no crepitations. Throat examination is normal. Her abdomen is very tender but there is no guarding. Malaria RDT is negative.

a. What is your suspected diagnosis and why? (10 marks)

Typhoid Fever

One of the following:
Clinical signs common in typhoid with fever >72 hours
No other signs of localising infection
Malaria screen is negative

Name: _____ Date:_____

b. Prescribe the appropriate antibiotic for this patient. Her weight is 25kg. (20 marks)

IV Ceftriaxone 2g (80mg/kg) once daily

c. Prescribe the appropriate maintenance fluid for this patient. Her weight is 25kg. (10 marks)

Ringers Lactate + 5% Dextrose = 1600ml/24 hours = 67ml/hour

You are called back to the ward 6 hours later as her abdominal pain has worsened and she is now guarding on examination.

d. What complication are you concerned this patient has developed? (5 marks)

Intestinal Perforation

3) You are called to the emergency department to see a 3-year-old girl with fast breathing. She looks very pale.

a. List 3 main causes of child-hood anaemia in low resource settings (15 marks)

Low birth weight/Preterm

Dietary causes

Infection – malaria, worms, HIV

Genetic – sickle cell anaemia

Malabsorption – Giardia

(Maximum 15 marks)

Name: _____ Date:_____

b. List 3 indications for a blood transfusion in a patient with anaemia (15 marks)

Severe anaemia <50g/dl or <40g/dl in severe malnutrition

Sysetmically unwell or not tolerating the anaemia i.e. cardiac failure, shock

Hyperparasitaemia in malaria if Hb <60d/dl

Major haemorrhage

Patients in shock who have not responded to fluid boluses

(Maximum 15 marks)

c. List 3 risks of blood transfusions and for each one explain how we reduce the risk? (30 marks)

Acute haemolytic transfusion reaction – ensure the blood is the correct group for the patient and perform regular monitoring of vital signs

Infection – ensure the blood transfusion is completed within 4 hours of leaving the fridge

Transmission of blood borne infections – ensure the donated blood has been appropriately screened

Transfusion related circulatory overload – cautious transfusion if cardiac failure/severe acute malnutrition and regular monitoring of vital signs

d. You have prescribed a blood transfusion, when would you ask the nurse to perform vital signs? (15 marks)

Before the transfusion for baseline vital signs
After the first 15 minutes
Then every 30 minutes unless clinically indicated

Name: _____ Date:_____

4) You are called to see a 4-year-old with a 3-day history of cough and coryza. She has severe subcostal recession and tracheal tug. On auscultation of the chest you can hear a wheeze bilaterally. Her oxygen saturations are 92% in air.

    a. Describe how you would initially manage this patient. She weighs 16.8kg. Please prescribe all medications in full. (60 marks)

Complete ABCDE examination

Oxygen, Aim Sp02 94-98%

Salbutamol 2.5mg nebuliser or if unavailable 10 puffs salbutamol via spacer (15 marks)

IV Hydrocortisone 50mg every 6 hours (accept prednisolone 15mg or 20 mg orally once daily) (20 marks)

IV Ringer's Lactate + 5% Dextrose 1340ml = 55ml/hr (accept maintenance calculated at 100% or 80%) (10 marks)

Close monitoring and re-assess treatment response

Name: _____ Date:_____

b. List 3 questions you would ask in the history to assess for a diagnosis of Asthma (15 marks)

| |
|---|
| Recurrent wheeze in the absence of infection<br>Family history of atopy<br>Personal history of atopy<br>Chronic nocturnal cough<br>Clear triggers for wheeze/difficulty in breathing – exercise, change in weather<br><br>Maximum 15 marks |

5) In clinic you review a 14-year-old boy with a 2-week history of fever and cough. The local clinic gave him a course of oral antibiotic for pneumonia but his symptoms have not improved. On auscultation of the chest he has crepitations. His oxygen saturations are 97%. He does not have any respiratory distress.

a. You are concerned this patient may have Tuberculosis. List 3 other questions you would ask in the history to support your suspicion? (15 marks)

| |
|---|
| Close contact with TB<br>History of night sweats<br>History of unexplained weight loss<br>Personal history of HIV or immunodeficiency |

b. List 3 investigations would you request to confirm the diagnosis? (15 marks)

Chest X-ray
Mantoux/tuberculin test
Gene Xpert
Sputum microscopy and culture for Acid Fast Bacilli

c. List 3 types of extra-pulmonary Tuberculosis. (15 marks)

Abdominal TB
TB Meningitis
Osteoarticular TB
TB Lymphadenitis

6) You are asked to see a 8-week-old baby who has presented with 24 hours of poor feeding and lethargy. On examination he is breathing fast with a respiratory rate of 65 breaths per minute. He has mild subcostal recession. His Sp02 94% in air. His chest is clear. He is tachycardic with a HR 175, his peripheries are cool, he looks mottled and he has a capillary refill time 4 seconds. He has a fever 38.3degrees. A malaria screen is negative.

a. What is your diagnosis? (5 marks)

Sepsis

(Accept meningitis or other relevant infection but the treatment below must treat the diagnosis and be safe)

b. What emergency sign is present? (5 marks)

Shock

Name: _____ Date:_____

c. Describe how you would manage this baby. He weighs 5kg. Please prescribe all medications in full. (80 marks)

Complete ABCDE examination

Oxygen

IV Fluid bolus 10ml/kg Ringer's Lactate = 50ml and re-assess (10 marks)

Consideration of ongoing hydration:

- Expressed Breast Milk via NG tube if required at 100-150ml/kg/day or
- IV maintenance fluid Ringer's Lactate + 5% dextrose at 100ml/kg/day = 16ml/hr

(10 marks)

IV Ampicillin 50mg/kg = 190mg every 6 hours (20 marks)

IV Gentamicin 7mg/kg = 35mg every 24 hours (20 marks)

Or IV Ceftriaxone 80mg/kg = 400mg every 24 hours (if only use ceftriaxone then to give all the marks for Amp & Gent as it is the complete treatment)

Keep warm with skin-to-skin

Check blood sugar

Check hydration by monitoring urine output

Regular re-assessment