

# PAEDIATRICS OSCE

LOYAL

# STATIONS

- Abdominal
- Respiratory
- CVS
- CNS
- Neonatology
- Communication skills
- Analysis stations
- Laboratory tests

# COMMUNICATION SKILLS: NEONATOLOGY

## QUESTION

- Talk to a mother who had a baby with **LIFE THREATENING CONGENITAL** but **POTENTIALLY TREATABLE HEART DISEASE**
- Discuss the situation with the mother

# COMMUNICATION SKILLS: NEONATOLOGY

## ANSWER

- Greet the mother/guardian and Introduce yourself
- Ask the patient to have a seat
- Be empathetic!
- Introduce and talk about the situation at hand:
  - Ascertain if the mother is aware that the baby is born with the birth defect (baby not properly formed)
  - Explain that you aren't sure of the cause
  - Reassure the mother that the medical team is doing their best
  - Inform about the care to be provided; also that a team will be looking after the baby
  - Describe the investigations required
  - Reassure that the chances of cure are good
  - Give the mother the opportunity to ask questions
  - Explain that surgical intervention is required with long term follow up
  - Also, inform the mother that subsequent pregnancies will require monitoring

# COMMUNICATION SKILLS: CHILD

## QUESTION

- A 6 year old child with history of vomiting blood
- Next step is to do an Upper G.I.T. endoscopy
- Your task:
  - Take a focused history
  - Take an informed consent

# COMMUNICATION SKILLS: CHILD

## ANSWER:

- Focused history:
  - Greet the mother/guardian and the child
  - Introduce yourself
  - Ask the patient to have a seat
  - History of general condition of the child
  - History of vomiting: onset, projectile?, frequency, volume, colour, smell
  - History of melena stool
  - History of causes of upper G.I. bleeding; prior episodes?  
Retching?
  - History of pre-existing conditions: Liver disease, P.U.D., G.E.R.D., use of drugs- N.S.A.I.D.s or steroids

# COMMUNICATION SKILLS: CHILD

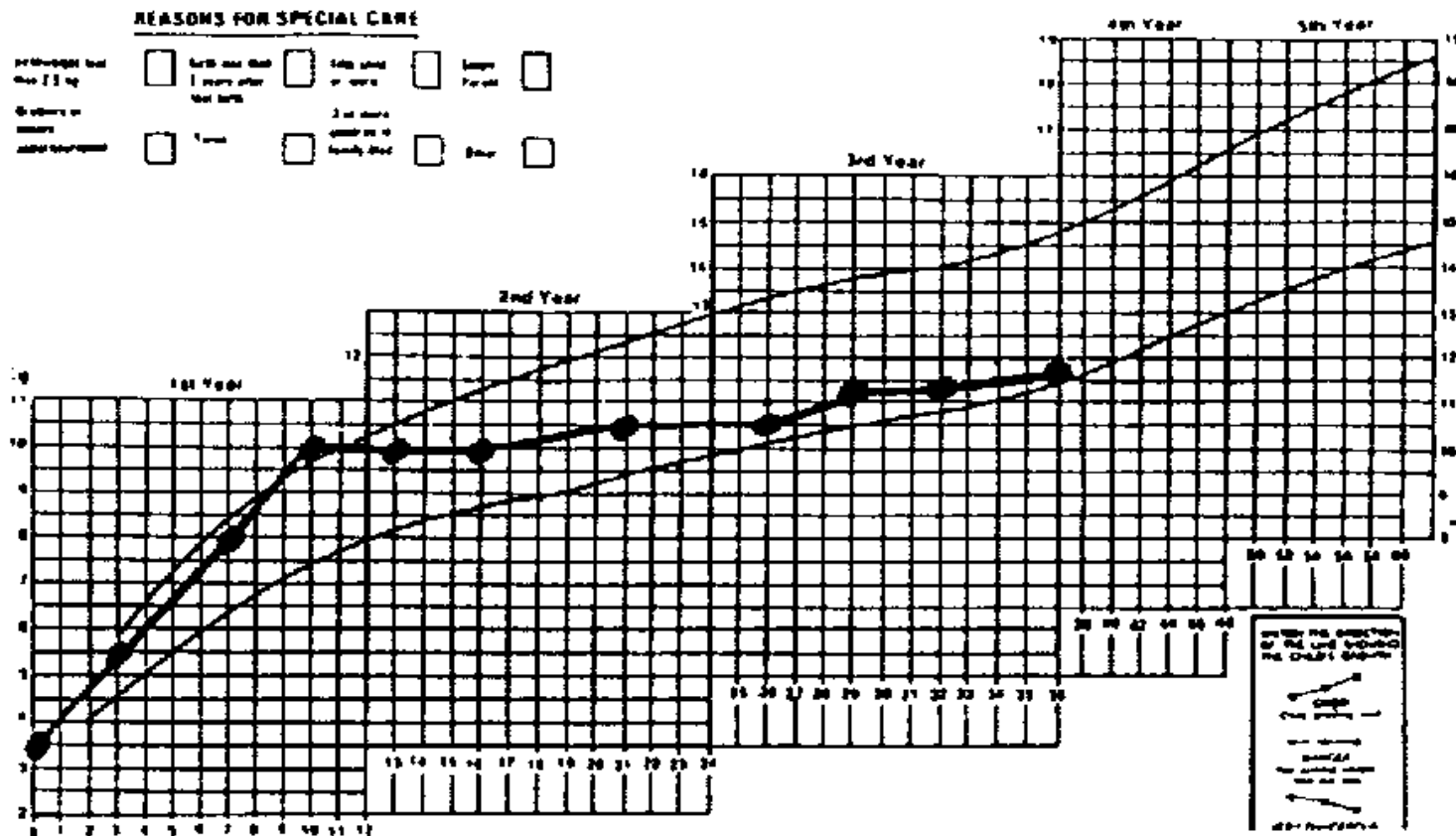
## ANSWER

Procurement of an informed consent to do an Upper G.I.T. endoscopy :

- Explain the procedure
- Explain the risks involved:
  - a) During procedure: bleeding, perforation
  - b) Risks associated with and side effects of anaesthesia
- Explain the benefits:
  - a) Establish source of bleeding
  - b) Able to stop the bleeding
- Give the Specific Treatment
- Closure: thank the patient and answer any questions

# GROWTH CHART

- Discuss the growth chart given below and discuss the prevention measures





# GROWTH CHART

## ANSWER:

- Discuss the growth pattern observed on the chart:
  - Explain- birth weight
  - The patient was doing well for the first few months
  - No growth afterwards for a certain duration
  - Any weight gain afterwards.
- Identify that the growth chart indicates growth faltering: also state the age of onset and the duration

# GROWTH CHART

## ANSWER:

- Preventive measures for growth faltering
  - i. Breast feeding:
    - Start shortly after birth (within 30 mins)
    - EBF for 6 months
    - Breast feed until 2 years of age
  - ii. Complementary feeding:
    - Start at 6 months
    - Should contain animal protein
    - 4 feeds a day
  - iii. Good maternal nutrition
  - iv. Reducing the impact of illness
    - Early diagnosis
    - Appropriate intervention
  - v. Family:
    - Birth spacing
    - Family size
    - Income
  - vi. Education
    - By the health worker
    - Of the family
    - Of the community

# UNMANNED STATION I



- This is a picture of a 6yr old child
- Describe the findings
- State the possible etiology
- State the complications
- Management with justification: prevention and treatment

# UNMANNED STATION I

- Chicken pox
- Findings: distribution: wide spread on face and neck. Lesions are in different stages: papule, pustule, vesicle, crust
- Possible etiology: Varicella zoster virus
- Complications:
  - Skin and soft tissue infections
  - Pneumonia
  - Otitis media
  - Keratitis
  - Hepatitis
  - Myelitis or encephalitis
  - Zoster multiplex: shingles
  - Ramsay- Hunt syndrome
- Management
- Prevention
  - Vaccination
- Treatment
- Calamine lotion- pruritis
- Antihistamine
- Analgesic: Paracetamol
- Anti-microbials
- Good nutrition

# UNMANNED STATION II

- PICTURE OF CHILD WITH ECZEMA
- Describe the picture
  - Lesions: dry, hyperpigmented lesions, with areas of thickening due to a chronic condition. Some parts are lichenified
- What are the general principals of management?
  - Removing the insulting agent
  - Maintaining the skin hydration: adequate water intake and lotion
  - Controlling the pruritis: Calamine lotion
  - Anti-inflammatory: corticosteroids
  - Management of any infections with anti-microbials

# LABORATORY RESULTS I

- The results are for a one year old child:
  - Hb: 6g/dl
  - MCV: 52
  - MCH: 22
  - WBC:  $5.4 \times 10^9/L$
  - PLATELETS: 776
- Interpret the results
- State the differential diagnosis

# LABORATORY RESULTS I

- Interpretation:
  - Low Hb
  - Low MCV
  - Low MCH
  - High Platelet
  - Indication of Hypochromic microcytic anaemia with reactive thrombocytosis
- Differentials
  - Iron deficiency anaemia
  - Sideroblastic anaemia
  - Anaemia of chronic disease
  - Thalasemia trait
  - Lead poisoning

# LABORATORY RESULTS II

- C.S.F. specimen of a child with a chronic headache
  - Appearance: Fibrin web
  - Protein: 0.5 g/L
  - Glucose: 1.6 mmol/L
  - CSF Glucose: Protein ratio: 0.4
  - WBC : 180
- Interpret the results
- State the differential diagnosis





# LABORATORY RESULTS II

- Interpretation:
  - Appearance: abnormal (fibrin web)
  - Increased proteins
  - Reduced glucose
  - Reduced CSF Glucose: Protein ratio
  - Increased WBCs
- Differentials: TB meningitis, fungal meningitis

# RENAL

- Very sick, nine month old child with no urine output for 2 days and height of 70cm
- Results:
  - Urea: 32
  - $K^+$ : 6.8
  - $Na^+$ : 128
  - $HCO_3^-$ : 6
  - Creatinine: 280
- Interpret the results
- State the indications for dialysis
- Know how to calculate the GFR

# RENAL

- Interpretation:
  - Hyperuricemia
  - Hyperkalemia
  - Hyonatremia
  - Increased bicarbonate
  - Increased creatinine
- Conclusion: Metabolic Acidosis
- Indications for dialysis:
  - Fluid overload
  - Hyperkalemia
  - Uraemia
  - Intractable metabolic acidosis

# NEONATAL RESUSCITATION

- Term infant delivered with severe bradycardia
- List the essential equipment required (preparedness) arranged in order of priority
- Initial resuscitation till time of **FIRST ANALYSIS**
- Explain any differences in resuscitating a child with:
  1. Congenital diaphragmatic hernia
  2. Extreme preterm

# NEONATAL RESUSCITATION

## EQUIPMENT

- For personal safety: Gloves, face mask, hair net
- Firm surface
- Warm, dry towels
- Suction
- Functioning Ambu bag (manual resuscitator or BVM) with right sized face mask
- Functional laryngoscope
- Different endotracheal tubes
- Guedel airway
- Initial resuscitation upto first evaluation
- Wipe and dry neonate as you stimulate him/her
- Wrap the child in a dry cloth
- Airway
  - Ensure patency – suction if required
  - Position: neutral head position with head tilt and chin lift
- Assess breathing for 5 seconds: look, listen and feel
- Fit the mask start ventilation for 30 breaths/min ensuring that the chest rises
- Check for heart rate (**FIRST ANALYSIS**)

# NEONATAL RESUSCITATION

- Differences in resuscitating:
  1. Congenital diaphragmatic hernia
    - Avoid BVM
    - Intubate immediately
  2. Extreme preterm
    - Wrap the neonate in cotton wool
    - Form a cap for the neonate with a face mask
    - Put them in a plastic bag without covering the face

# NEONATAL RESUSCITATION II

- MUST KNOW:
- The resuscitation of a neonate with meconium stained liquor
- Resuscitation until:
  - 1 min
  - 5 min
  - 1<sup>st</sup> analysis

# NEONATOLOGY

- A 18 hour term neonate is noted to have jaundice
- The ten most important questions one would ask the mother are:
  - 1) Onset and progression of jaundice
  - 2) Fever
  - 3) Ability to breast feed
  - 4) Presence of convulsions or lethargy
  - 5) Delay of cry at birth
  - 6) Antenatal infections
  - 7) Prolonged rupture of membranes
  - 8) Blood group of mother
  - 9) Previous history of a baby with jaundice
  - 10) Preterm delivery



# HIV I

- RVD positive pregnant lady attending ANC
- Referred by the obstetrician
- Counsel mother
- Plan management for the child in terms of:
  - Feeding
  - Follow-up investigations

# HIV I

- Counseling:
  - Greet the mother and introduce yourself
  - Ask the patient to have a seat
  - Be empathetic!
  - Confirm if the mother is aware of her HIV status
  - Confirm the awareness of the impact on the baby
  - Feeding either: EBF (given with Nevirapine) or Replacement feeding(must meet the AFASS criteria)
    - Do not give mixed feeding!!  
Increases chances
  - Start complementary feeds at 6 months
- Investigations:
  - At 6 weeks: HIV DNA PCR
  - If the test above is negative then at 9 months: Test HIV antibodies via ELISA
  - At 18 months: Test HIV 1 and 2 antibodies via ELISA
- Closure:
  - Ensure the mother understands the plan
  - Allow the mother to ask questions
  - Allow mother to take leave

# HIV II

- Counsel a **newly diagnosed RVD** patient referred by the obstetrician with **preterm labor**
- Explain the immediate risks Greet the mother and introduce yourself
  - Ask the patient to have a seat
  - HIV- Explain: The new diagnosis is associated with high viral load and the lack of ARV usage and instrumentation during labor can increase chances of transmission
  - Prematurity: need for resuscitation, higher chances of RDS, TVH and feeding difficulties
- Long-term complications to the child:
  - Increased susceptibility to infections
  - Chronic lung disease
  - Growth and developmental delay
  - High mortality rate
- In subsequent pregnancies
  - ANC is vital
  - ARV usage is a must: Adherence is supposed to be 90%
  - Need for planned pregnancies

# RESPIRATORY SYSTEM

- Child presenting with fever, cough and difficulty in breathing- for three days each. Associated difficulty in feeding.
- Examine the child: Inspection
- Relevant DIAGNOSIS with classification

# RESPIRATORY SYSTEM

- Inspection
  - Greet the patient and Introduce yourself
  - Explain the examination and ask for consent for examination
  - Physical examination: INSPECTION
    - a) Head nodding
    - b) Pallor
    - c) Nasal flaring
    - d) Grunting
    - e) Central cyanosis
    - f) Peripheral cyanosis
    - g) Finger clubbing
    - h) Count respiratory rate for one minute
    - i) Chest symmetry
    - j) Chest wall indrawing
    - k) Accessory muscle use
    - l) Abdominal movement with respiration
- Diagnosis: Pneumonia
- Classification:
  - 1) Very severe pneumonia
  - 2) Severe pneumonia
  - 3) Pneumonia
- Definitive treatment:  
DEPENDS ON  
CLASSIFICATION
  - 1) Crystapen + gentamycin
  - 2) Oxygen

# CVS I

- Examine the pulses and narrate the findings
- State in which conditions a collapsing pulse is found

# CVS I

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- Radial pulse:
  - Pulse rate for 1 min
  - Rhythm
  - Volume
  - Character
  - Symmetry between radial pulses
  - Radio-femoral delay
  - Collapsing pulse
- Brachial pulse
- Carotid pulse (UNILATERAL!!)
- Popliteal pulse
- Posterior tibial pulse
- Dorsalis pedis pulse
- Collapsing pulse is found in:
  - a) Aortic regurgitation
  - b) Hyperdynamic circulation
  - c) PDA
  - d) Large A-V defect

# CVS II

- Examine the precordium and narrate the findings for a patient with suspected congestive heart failure
- State the management of a child with congestive heart failure



# CVS II

## EXAMINATION

- Greet the patient and Introduce yourself
- Explain the examination and ask for consent as you warm hands
- Perform the examination when patient is propped up (preferred)
- Inspection: from the foot of bed-
  - Symmetry and nipples
  - Active: Hyperactive precordium?
  - Blood vessels?
  - Masses?
  - Scars
- Palpation:
  - Apex beat
  - Left parasternal heave
  - Areas of the valves: look for thrills
- Auscultation
  - All areas of the valves: Mitral, Aortic, Tricuspid, Pulmonary
  - Lower back of the chest wall

# CVS II

## Management of a CCF patient

- Prop up in bed
- Give oxygen if in distress
- Administer diuretics
- Administer Digoxin
- Treat any underlying problems

# CVS III

- A child with HTN referred to you by the GP
- Take the BP
- State relevant investigations for the child based on the physiological basis

# CVS III

## Taking BP

- Greet the patient and Introduce yourself
- Explain the procedure and ask for consent
- Measure the upper arm circumference using a tape measure
- Select an appropriate sized cuff using the above measurement
- Place cuff on the arm
- Palpate the brachial pulse
- Start the pump upto 20mmHg after loss of brahial pulse
- Place the stethoscope
- Reduce presure (2mmHg/sec)

# CVS III

- Relevant investigations for the child based on the physiological basis:
  - 1) U/E/C: reduced kidney functions can contribute to HTN
  - 2) Serum renin levels
  - 3) Doppler ultrasound for renal artery for renal artery disease
  - 4) 24 hour urinalysis for VMA for pheochromocytoma
  - 5) Potassium levels in Cohn's syndrome
  - 6) 4 limb BP for vascular disease

# ABDOMEN I

Palpate the abdomen of the child with abdominal pain

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- From the right side, adequately expose the abdomen
- Ask for any area of tenderness
- Light palpation: **LOOK AT FACIAL EXPRESSION!!** In a sequential manner. Nodules or Masses? Tenderness?
- Deep palpation
- Organ specific palpation: liver, spleen, bimanual palpation of kidneys
- Palpate the inguinal region for lymph nodes or hernia
- IN MALES: palpate the testes
- Cover the patient
- Thank the patient

# ABDOMEN II

Examine the child with ascites

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- Adequately expose the abdomen and inspect from the foot of the bed
  - Abdominal fullness
  - Symmetry
  - Movement with respiration
  - Scars, superficial blood vessels
  - Umbilical stump
- Light palpation: **LOOK AT FACIAL EXPRESSION!!** In a sequential manner. Nodules or Masses? Tenderness?
- For ascites elicit fluid thrill and shifting dullness

Differential diagnosis

- Liver disease
- Portal HTN
- Protein losing enteropathy
- Abdominal malignancies
- Nephrotic syndrome

# ABDOMEN III

- **MUST KNOW** examination of
  - Liver pathology
  - Nephroblastoma
  - Neuroblastoma



# CNS I

- Child with history of weakness
- Perform a motor exam of the lower limb
- Perform a motor exam of the upper limb
- State the investigations and give differential diagnosis of a child with flaccid paralysis of lower limbs

# CNS I: LOWER LIMB

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- From right side of bed
- Inspect: Lower limb posture
- Palpate:
  - Muscle bulk
  - Tone across all joints
  - Power
  - Reflexes: Knee jerk, ankle, ankle clonus, babinski

# CNS I: UPPER LIMB

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- From right side of bed
- Inspect: Upper limb posture
- Palpate:
  - Muscle bulk
  - Tone across all joints
  - Power
  - Reflexes, biceps, triceps, supinator

# CNS I: INVESTIGATIONS

Investigations for flaccid paralysis of lower limbs

- MRI or CT of spine
- Nerve conduction studies for peripheral neuropathy
- Stool test for polio

# CNS I: DIFFERENTIALS

Differential of flaccid paralysis of the lower limbs

- Polio
- Transverse myelitis
- Guillain Barre syndrome

# CNS II

Child who has undergone craniopharyngioma removal

Examine cranial nerve II, III, IV & VI

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- From right side of bed
- CN II
  - Visual acuity and colour vision: ask for Snellen chart and Ishihara chart
  - Visual field: confrontational
  - Pupillary reflex: direct and consensual

# CNS II

- CN III: Movements of eyeball
  - Elevation
  - Depression
  - Adduction
  - Upwards and outward
- CN IV:
  - Movement of eyeball- Abduction
  - Pupillary reflex: Direct & consensua
- CN VI: Downward and inward movement of eye

# CNS III

Child who has fallen from a motor bike

Examine Cranial nerve V and VII

- Greet the patient and introduce yourself
- Explain the examination and ask for consent as you warm hands
- From right side of bed
- CN V:
  - Sensory: light touch with cotton wool on face and corneal reflex
  - Motor: clench teeth, open mouth against resistance, palpate the bulk of the masseter muscle
- CN VII
  - Frown
  - Raise eyebrows
  - Smile
  - Inflate the mouth (Blow out cheeks) with air then tap gently bilaterally



# CN III

- Give the differences in upper and lower motor neuron lesion in facial nerve palsy
- UMNL: Spares eye closing and brow muscles

# Radiology I

- CXR with Opacity of the right lung apex
- Interpret the specimen

## INTERPRETATION

- CXR: AP view
- Skeletal cage
- Lungs- right Upper lobe with opacity
- Heart size
- Diaphragm

DIAGNOSIS: Pneumonia

## INVESTIGATIONS

- Oxygen (KNOW DOSE)
- Benzyl penicillin (KNOW DOSE)
- Feeding

# Radiology II

- Evaluation of a child with fever, cough and progressive difficulty in breathing for two days
- Report the specimen
- Management
- SPECIMEN
  - CXR: AP view
  - Skeletal cage
  - Lungs- pneumothorax, COLLAPSED LUNG
  - Mediastinal shift
  - Gas in the pleural cavity
  - Heart size
  - Diaphragm
- Management
  - Chest tube insertion
  - Oxygen
  - Treat underlying disease
  - Appropriate feeding