

Objective Structured Practical Examination (Data Interpretation)

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Objective Structured Practical Examination (Data Interpretation)

- Test your ability for rational interpretation of laboratory data in the context of clinical situation .
- You need to
 - take your time reading the whole data mindfully
 - read all the questions and the data again
 - answer precisely

Station- 1

A 35 –year- old female presented with recurrent attacks of joint pain, cough, chronic exertional dyspnoea and polyuria for last 3 months. Clinically she has bilateral lower motor neuron 7th cranial nerve palsy. Available data are shown below.

- RBS: 7 mmol/L,
- Sputum for AFB :
Negative, Urine
RME:RBC 2+,
- Urinary osmolality: 412 m
Osmol/Kg,
- Plasma osmolality : 350
mOsmol/Kg,
- Plain Xray abdomen :
Bilateral nephrocalconosis

1. Write the underlying cause of osmotic abnormality.
2. Mention four other neurological manifestations of this disease.
3. Write four pulmonary complications of this disease.
4. Mention four steps of management of this patient.

1. Cranial DI

1

2.

0.75x4=3

a.Pachymeningitis, b. Space occupying lesion, c.mononeuritis multiplex, d. peripheral neuropathy

3.

(Any four)

0.75x4=3

a. Pulmonary fibrosis b.Aspergolloma c.Bronchiectasis, d.Pneumothorax e.Pulmonary hypertension leading to corpulmonale

4.

0.75x4=3

a.Systemic Corticosteroid

b.DMRD- Methotraxate/Azathioprine

c.Specific TNF – Alpha

d.Long acting analog of vasopressin/ intranasal desmopression.

Station 2

A 56- year- old lady presented with collapse. She had two syncopal attacks in last 48 hours. She was poorly communicative and sweaty. Pulse was 30 beats /min, regular , BP was 100/70 mm of Hg and respiratory rate was 24/min . Cardio-pulmonary auscultation was unremarkable and no neurological deficit. Her previous investigations reports are given below

- CBC: Hb% 12.4gm/dl,
TC-8,000/cmm of blood,
platelet count 1,82,000/cumm,
- S.TSH: 3.5
- S.Creatinine:70micromol/L

- 1.Mention three important bedside investigations you will do immediately.
- 2.Mention four immediate steps you will take.
3. If her spot blood biochemistry is normal, what three important diagnosis you expect in other investigation?

1. 1x3=3

a. Pulse oxymetry

b.RBS

c.ECG

2. 1x4=4

a. Maintainance of patent airway

b.O₂ inhalation,

c. Opening of IV Channel,

d.IV atropine

3. 1x3=3

a.Sinus bradycardia.

b.2nd drgree AV block at constant ratio.

c. Complete Heart Block.

Station 3

A 32-year-old woman, 22 weeks of pregnancy, was brought to emergency department with 3 days history of fever followed by sudden collapse. On examination, she was mildly icteric, having diffuse purpura on legs and left-sided weakness. Investigations are shown below:

- CBC: Hb% 8.4gm/dl, TC-12,000/cmm of blood, platelet count 32,000/cumm,
- PBF :Fragmented RBC,
- Prothrombin time:P-14 sec, C-12sec,
- SGPT and SGOT- Normal,
- APTT: 35sec,
- ANA: Negative,
- S.Creatinine:190micromol/L
- Anti phospholipid antibody - Negative

1. Mention three differential diagnoses you will consider in this case?
2. Mention the cause of her hemiparesis ?
3. List three precipitating factors.
4. Mention emergency treatment option for her.

1. 1x3=3
 - a. Thrombotic thrombocytopenic purpura(TTP)
 - b. Disseminated intravascular coagulation(DIC),
 - c. Haemolytic Uraemic Syndrome (HUS)

2. Thrombotic microangiopathy 2

3. (Any three) 1x2=3
 - a. Malignancy b infection(shiga toxin / HIV)
 - d. Drugs (cisplatin,ticlopidine,cyclosporine A, Quinine)

4. Plasmapheresis 2

Station -4

A 50 -year- old man has progressively deepening jaundice for about two months, high grade fever and vomiting for a week. His liver was felt enlarged and mildly tender. Investigations are shown below.

- CBC: Hb- 10 gm/dl, TLC: 24,000/cmm P: 81% L : 14%, M : 4%,E : 1%
- RBS:7.1mg/dl ,Blood Urea:48 mg/dL
- Serum creatinine;2.8 mg/dL
- S.Bilirubin:16 mg/ dl, S. AST : 104 U/L
- S. Alkaline phosphatase- 798 unit /l
- S. Amylase: 50 unit/L
- Serum Electrolytes: Na-125 mEq / L
K-5.3 mEq / L ,Cl-94mEq/L,
HCO₃-23 mEq/L
- Prothrombin time - 29 seconds
- INR: 2.3, HBSAg (screening)- Positive
- CA 19-9: 69 U/ml

1. Mention four further investigations to reach the diagnosis .
2. What is your complete diagnosis?
3. Write three initial steps of treatment.

- 1 (Any four) 1x4=4
- a USG/ CT of abdomen/ HBS and pancreas
 - b. Upper GI endoscopy - to inspect the duodenal papilla
 - c. MRCP- Non-invasive localisation of biliary obstruction, pancreatic mass detection
 - d. ERCP- Diagnosis of peri-ampullary carcinoma, localisation of biliary obstruction, setting to relieve biliary obstruction
 - e. CT/ USG guided FNAC -diagnose the pancreatic carcinoma.

2. Max-3

Obstructive jaundice (0.5) due to carcinoma of pancreato-biliary origin/carcinoma head of pancreas(0.5) and Cholangitis(0.5) ,Renal impairment (0.5) , electrolyte imbalance (0.5) and Possible hepatitis-B virus carrier (0.5)

3. Any three) Max=3
- a. Maintenance of nutrition(0.5) and electrolyte imbalance (0.5)
 - b. Broad spectrum antibiotic 1
 - c. Vitamin-K parenteral 1
 - d. Antipyretic 0.5

Station-5

A 30 –year-old female , nonsmoker presented with history of recurrent TIAs for last 2 years. Her blood pressure is 160/ 100 mm of Hg and spleen is just palpable. Her complete blood count and blood biochemistry reported below .

- Hb-18mg/dl, TC-19000/cmm (N-83%,L-15%, B-1%, E-1%),MCV-70fl, MCHC-28g/dl, Platelet count-6,00,000/cmm,
- PCV-58%,
- S. bilirubin 2.3mg/dl SGPT-35 U/L, SGOT 37U/L

1. Write down four important signs you will search on physical examination.
- 2.Mention five investigations to confirm your diagnosis.
3. Mention three treatment options for her.

1. (Any four) Max-2
- a. Congested conjunctiva /eye (0.5)
 - b. Cyanosis (0.5)
 - c. Palmar erythema (0.5)
 - d. Retinal haemorrhage /palpilloedema (0.5)
 - e. Bruise/Echymosis (0.5)

2. (Any five) Max-5
- a. PBF (1)
 - b. Bone marrow study (1)
 - c. Blood erythropoiten level (1)
 - d. JAK2 (1)
 - e. Red cell mass (1)
 - f. CXR (0.5)
 - g. USG Of whole abdomen (0.5)

3. (Any three) Max-3
- a. Drugs: Hydroxy urea (1) / Carbamide (0.5) / Alpha interferon (1)
 - b. Ruxolitinib /JAK2 inhibitor (1)
 - c. Venesection (1)
 - c. Radioactive phosphorus (1)

Station-6

A 25-year-old obese woman presented with recurrent headache accompanied by transient diplopia. Clinical examination showed bilateral papilloedema and left 6th cranial nerve palsy. Investigations are shown below.

- Hb:12mg/dl, TC:11000/cmm (N-67%,L-30%, B-2%, E-1%),MCV:75fl, MCHC:30g/dl, Platelet count-200000/cmm,
- PCV-38%, S. bilirubin 0.8mg/dl SGPT-25 IU/L, SGOT 27IU/L
- RBS-5.5 mmol/L
- CT of brain - Unremarkable

- 1.What is the most likely diagnosis ?
- 2.Mention the other differential diagnosis.
- 3.Write down three further investigations for this lady.
- 4.Mention four options of treatment.

1. Benign Intracranial Hypertension/ Idiopathic Intracranial Hypertension / Pseudotumour cerebri 1.5
2. Cerebral venous sinus thrombosis 1.5
3. Max=4
 - a. MRI of Brain (1) and MRV of brain (1)
 - b. Lumber puncture/ CSF study (1)
 - c. Fundus Flurescein angiography(1)
4. (Any four) 0.75x4=3
 - a. Withdrawl of offending drugs
 - b. Weight reduction
 - c. Carbonic anhydrase ihibitiors/Acetazolamide
 - d. Optic nerve sheath fenestration
 - e. Lumboperitoneal shunt.

Station-7

A 40-year-old woman presented with thirst and polyuria of six months duration. She had suffered several episodes of lower back pain. She was on no medication. On examination she looked well, had a dorsal kyphosis and blood pressure of 170/95 mm of Hg. Investigations are shown below

- Hb:12mg/dl, TC:11000/cmm (N-67%,L-30%, B-2%, E-1%),MCV:75fl, MCHC:30g/dl, Platelet count-200000/cmm
- ESR-40 mm in ist hour
- Bl urea : 12 mmol/L
- Serum creatinine : 180 mmol/L (60-110) ,
- Serum albumin: 40 g/L
- Serum total calcium : 2.98 mmol/L

1. Write six other symptoms you will search in history.
2. Mention five investigations to establish the diagnosis.
3. What is the choice of treatment for her?

1. (Any six) Max=4.5
- a. Upper abdominal pain (1), b. Nausea(0.5), c. lethargy (0.5) ,
d. anorexia(0.5) e. constipation(1) f. dyspepsia(0.5) ,g.
depression(1) , f. impaired cognition(1), g. drowsiness (0.5)
2. (Any five) Max= 4
- S. PTH 1
 - S. Phosphate 0.5
 - S. alkaline phosphatase 0.5
 - 24 hour urinary calcium 0.5
 - Parathyroid scanning by T 99m sestamibi scanning 1
 - MRI/ C T/ USG scan of parathyroid/neck 1
3. Parathyroidectomy 1.5

Station-8

A 14-year-old girl was admitted because of poor intake, vomiting, fever and abdominal pain over the last 3 days. Mother denied any history of drug ingestion. Past medical history is significant for recurrent urinary tract infections. The BP was 90/60 mmHg, PR 90/min, and respirations 32/min. Laboratory data are shown below-

- S. electrolyte: Na^+ of 135 mEq/L, K^+ 3.2 mEq/L, Cl^- 117 mEq/L, HCO_3^- 10 mEq/L,
- BUN 23 mg/dL,
- S.creatinine 0.4mg/dL, RBS 100 mg/dL,
- S.calcium 9.2 mg/dL, S.phosphorous 4.0 mg/dL, S. uric acid 4.8 mg/dL.
- Arterial blood pH was 7.10, and pCO_2 -34 mmHg, HCO_3^- -12
- Urinalysis showed a pH of 6.5, negative for blood or protein.
- The urine sediment was normal.
- Urine Cl^- was 52 mEq/L, Na^+ 68 mEq/L, and K^+ 25 mEq/L.

1. Which acid-base disorder is present here ?
2. Write is the most likely diagnosis.
3. Mention the most likely causes of your diagnosis?
4. Write four investigations you will do to establish the diagnosis?

1. Normal Anion gap(0.5) metabolic acidosis (1) 2.5
plus Respiratory acidosis (1)
2. Renal Tubular Acidosis -IV 1.5
3. Pyelonephritis (1) with VUR (0.5) 1.5
4. (Any four) Max=4.5
- a. Urine RME (0.5) and C/S (1) b. USG of KUB (1)
- c. Voiding cystourethrography (VCUG)/ Retrograde
cystourethrography and Micturating cystourethrography (1)
- d. Direct radionuclide cystography (RNC) (1)
- e. Radionuclide renal scan/Dimercaptosuccinic acid (DMSA)
renal scan (1)

Station-9

A 25- year- old male presented with alteration of bowel habit for 1 year and occasional bloody stool. He developed severe pain and distension of abdomen for 2days. Investigations are shown below.

- CBC:Hb-8.5gm/dl
TC:16,000/cmm (N-82%,L-15%, B-2%, E-1%), ESR-60 mm in 1st hour.
Platelet count-4,00,000/cmm
- RBS: 6.5mmol/L
- S. cratinine-1mg/ L
- Plain X-ray abdomen: Distended loops of colon with wall thickness 8cm and air fluid levels.

1. Write four signs for assessment of severity of his disease.
2. Mention four non GI complications that occur during active phase of this disease.
3. Mention six steps of management.

1. (Any four) 0.75x4=3
a. Pulse-tachycardia b. BP- hypotension c. Temperature d. Anaemia
e. Dehydration

2. (Any four) 0.5x4=2
a. Conjunctivitis b. iritis, c. Arthralgia d. Erythema nodosum, e. Pyoderma
gangrenosum, f. Venous thrombosis,

3. (Any six) Max=5
a. IV fluid (0.5)
b. Nasogastric suction (0.5)
b. Transfusion of blood (0.5)
c. IV (0.5) methyl prednisolone/ hydrocortisone (1)
c. Antibiotic to prevent infection (1)
d. Nutritional support (0.5)
e. Subcutaneous heparin for prophylaxis of venous thrombosis (0.5)
f. Avoidance of opiates or antidiarrhoeal agent (0.5)
g. Consider cyclosporine/ infliximab in stable patient if not responding with 3-5
days of steroid (1)

Station -10

A 30-year-old married male presented with chronic cough with sputum and recurrent headache for 10 years. Investigations shown below .

- Hb-11mg/dl, TC-13000/cmm (N-77%,L-26%, B-2%, E-5%),ESR-56mm, Platelet count-5,00,000/cmm
- ECG- inverted P wave in II and V₁. Positive deflection of PQRS in aVR
- RBS-5.6 mmol/ L
- S. creatinine- 1.1 mg/L

1. What is the most likely clinical diagnosis ?
2. Write down three other symptoms you will ask to the patient.
3. What is the cause of his headache ?
- 5: Mention five investigations will be done to confirm the diagnosis ?

1. Kartagener's syndrome 1

2. 1x3=3

a Haemoptysis, b. Recurrent chest pain, c. Weight loss,
d. Ask about infertility

3

. Sinusitis (1) / brain abscess(0.5) 1

4 . (Any five) Max=5

a.CXR P/ A view (1)

b. HRCT Scan of chest (1)

c. USG Of whole abdomen (1)

c. X-ray PNS OM view (0.5)

d. Saccharin test to assess mucociliary function (0.5)

e. Semen Analysis to see the motility of spermatozoa(0.5)

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Thank You