

4.

A 65 year old man presents with progressive weakness, easy fatigability, over several months. He has backache, and bone pains and tenderness. He has moderate pallor and is frail.

(a) State 3 likely differential diagnoses. [3 marks]

- (i) Multiple myeloma
- (ii) Ca Prostate with bone metastases
- (iii) Metastatic other bone metastases, Hyperparathyroidism, Leukaemia, infiltration, Paget's disease

(b) List 5 most appropriate diagnostic tests and state the utility of each test in his differential diagnosis. [5 marks]

- (i) Skeletal survey - type Bone lesions
- (ii) PSA - ↑ Ca Prostate
- (iii) Bone marrow - Myeloma cells, or less
- (iv) Serum electrophoresis - M-band
- (v) Radioisotope Bone Scan - Bone metastases
Urine electrophoresis - Bence Jones Protein
Serum Ca²⁺ - ↑ in MM, Hyperparathyroidism

(c) If he has no urinary symptoms, no lymphadenopathy and no hepatosplenomegaly, what is the most likely diagnosis?

Multiple Myeloma [1 mark]

(d) State 4 other clinical problems/complications associated with the diagnosis [4 marks]

- (i) Anaemia (v) Hypercalcaemia
- (ii) Renal failure (vi) Cord Compression
- (iii) Susceptibility to infections
- (v) Bone pain and fractures

(e) List 3 drugs used in to control the disorder [3 marks]

- (i) prednisone / Glucocorticoids (ii) Alkylating agents (melphalan,
chlorambucil, cyclophosphamide)
- (iii) Vincristine, Thalidomide
(Vincristine, doxorubicin, Dexamethasone)

(f) List 4 aspects of supportive care [4 marks]

- (i) Pain management (ii) Bisphosphonates
- (iii) transfusions (iv) Hydration
- (v) Allopurinol, (vi) management of infections (vii) Dialysis
- (viii) Ca²⁺ / vit D suppl (ix) Plasmapheresis (Hypernatraemia)
- (x) Fluonides

... has been fairly well, presents with gradually worsening listlessness, easy fatigability. Examination reveals pallor + + +, no jaundice, no lymphadenopathy, no hepatosplenomegaly. Basic laboratory evaluations show Hb 5.1g/dl, platelets $420 \times 10^9/l$, WBC $6.2 \times 10^9/l$, MCV 81 fl.

(a) What is the most likely diagnosis?

Fe Deficiency Anemia

→ Blood loss

→ lack of Fe Intake

→ lack of Fe Absorption

(b) List 5 common causes of the condition

1. G.I Bleeding - PUD, varices, polyps

2. Hook worm infestation

3. lack of Fe absorption

4. Pregnancy

5. inadequate dietary intake

5. Malabsorption

(c) List 4 additional investigations you would do to confirm the diagnosis and the expected findings

... of portal hypertension which are followed by ...

Presinusoidal - (2)

Sinusoidal (2)

Post-sinusoidal - (1)

1. Portal hypertension
2. Splenomegaly
3. Hepatocellular carcinoma
4. Cirrhosis of liver
5. Budd-Chiari syndrome
Hepatic vein thrombosis

(b) State 5 key clinical signs that indicate massive (> 15 blood volume) bleeding.

7. An 18 year old girl ... health facility. She ... with IV fluids, IV ... referred to the Nat ... severe pallor; BP ... 42mmol/l, creati ...

(a) List 4 fact ...

1. Hypo ...

(b) List ... ratio ...

by ...

7

40 year old HIV-positive, HAART-naïve male patient presents with a 3 week history of headache and fever. Examination reveals a stiff neck. His CD4 count is 22 cells/ml

- (a) List 3 possible microbiological aetiologies. [5 marks]
- (i) Mycobacterium tuberculosis (2)
 - (ii) Cryptococcus neoformans (2)
 - (iii) Treponema pallidum (1) Partially Treated meningitis
 - (iv) Toxoplasma meningococcal
- (b) Outline the specific first line antimicrobial therapy for each of the 3 microbiological agents in (a). [9 marks]

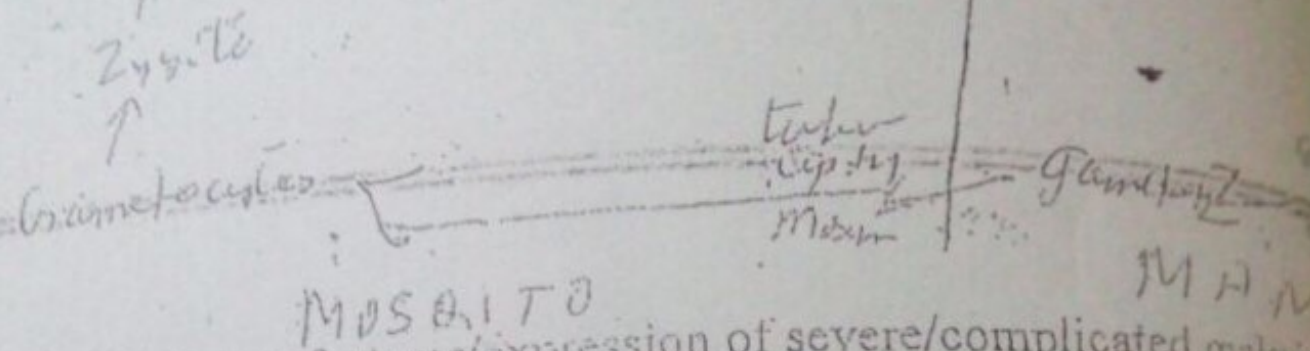
- (i) TB - RHZE x 2/12, RH x 7-10/12 (Total 9-10/12)
- (ii) Amphotericin B + Flucytosin 2/52
Fluconazole x 8/52
Fluconazole for life if or if CD4 > 100 x 6/12
- (iii) Syphilis - pen G 18-24 mega/day x 14 days
- (iv) Sulfadiazine + pyrimethamine combination x 6 weeks or Septim 1DS BD x 6 weeks then second prophylaxis

(c) Outline the management of his HIV infection. [6 marks]

1) Evaluation - HBsAg, LFTs, FBC, HCV, VDRL, LFT (ALT), UECr + CXR with sep for rif

2) Specific Treatment for HIV - 1st line HAART (Tenofovir, lamivudine + Efavirenz) to be initiated within 6-8 weeks (delay the HAART initiation)

3) Supportive Treatment - nutritional counselling, support, Septim prophylaxis, prevention with positives (Condoms, contraception), cervical cancer screening



MOSQUITO

d) List 6 clinical features/expression of severe/complicated malaria [6 marks]

1. Mental Changes.
2. SEVERE ANAEMIA
3. RESPIRATORY DISTRESS
(Plethora of leucocytes)
4. JAUUNDICE
5. RENAL FAILURE
6. Generalized bleeding
(Circulatory collapse)

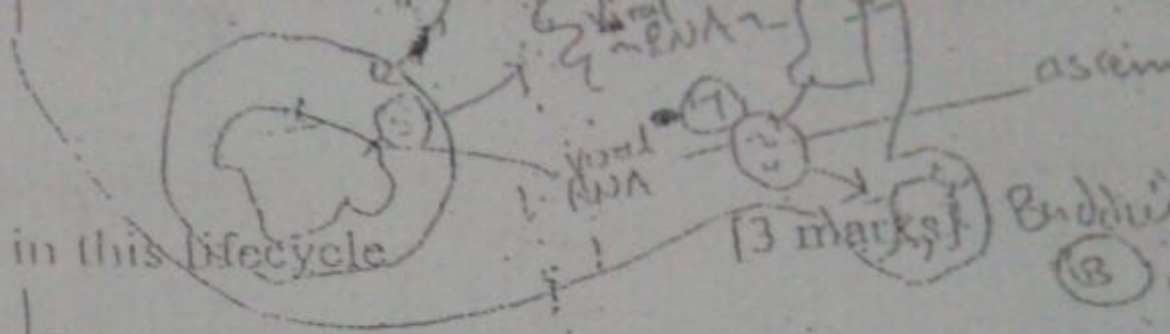
e) What antimalarial agents are recommended for use in a patient associated with diminished consciousness and confusion. [2 marks]

1. IV Parenteral Artesunate
2. IV Quinine

f) List 4 malaria control measures. [4 marks]

1. VECTOR CONTROL ← Indoor residual spray

Integrated
Proviral
DNA



(b) List 3 of the enzymes involved in this lifecycle

1. Reverse transcriptase
2. Integrase
3. Protease

R1 R2 R3
NURIP
NURIP

List 5 classes of drugs that been developed for the stages of the life cycle. [5 marks]

1. Fusion Inhibitors - Enfuvirtide
2. CCR5 Inhibitors - Maraviroc
3. Reverse transcriptase Inhibitors
 - (a) Nucleoside
 - (b) Nucleotide
 - (c) Non nucleoside
4. Protease Inhibitors
5. Integrase Inhibitors

antiviral drugs name one specific expected

An 18 year old girl is managed for severe PV bleeding in a peripheral health facility. She had tried to procure an illicit abortion. She is managed with IV fluids, IV gentamycin and IM diclofenac for 36 hours and then referred to the National referral hospital for further management. She has severe pallor; BP 85/40 mmHg and temperature 38.8°C. Serum BUN 42mmol/l, creatinine 642µmol/l. *normal*

severe - anti biotic
severe - anti biotic

(a) List 4 factors related to the aetiology of this presentation. [4 marks]

1. Hypotension / Volume loss
2. Diclofenac
3. Gentamycin
4. Sepsis

5

A 26 year old woman is admitted with a 3 day history of cough, pleuritic chest pain and fever. She is found to have a temperature of 39.2° pulse rate 106/min, respiratory rate 30 breaths/min and blood pressure 86/50 mm Hg.

- (a) What is the diagnosis? Severe Sepsis / Pneumonia [2 marks]
- (b) List 5 relevant priority, investigations and state the usefulness/expected result of each investigation.

CAP
Procalcitonin ↑
D-Dimer

| Investigation [5 marks] | Result/usefulness [5 marks] |
|--|--|
| (i) <u>Full blood count</u> | <u>high WBC or low WBC ↓ Plt.</u> |
| (ii) <u>Blood culture</u> | <u>Culture positive to organism like</u> |
| (iii) <u>Serum lactate</u> | <u>high</u> |
| (iv) <u>CXR</u> | <u>could suggest pneumonia</u> |
| (v) <u>Coagulation screen</u> | <u>suggest DIC</u> |
| <u>SPaO₂ in - gram stain, Culture -</u> | <u>Possible organism -</u> |
| <u>WBC</u> | <u>renal dysfunction</u> |

- (c) Outline the relevant aspects of her management (treatment). (Use only the space provided on the same page) [8 marks]

- ICU admission, monitor CVP & BP
- Resuscitation - Airway, Breaths, Circulation
- IV Crystalloids, Vasopressors
- Empiric IV antibiotics - within 1 hr
- Support organs
- - eg dialysis
- - Respiration

7

40 year old HIV-positive, HAART-naïve male patient presents with a 3 week history of headache and fever. Examination reveals a stiff neck. His CD4 count is 22 cells/ml

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1) Evaluation - HBsAg, LFTs, FBC, HCV, VDRL, LFT (ALT), UECr + CXR with sep for rif

2) Specific Treatment for HIV - 1st line HAART (Tenofovir, lamivudine + Efavirenz) to be initiated within 6-8 weeks (delay the HAART initiation)

3) Supportive Treatment - nutritional counselling, support, Septin prophylaxis, prevention with positives (Condoms, contraception), cervical cancer screening

1. Plasmodium falciparum

2. Plasmodium Malariae

3. Plasmodium vivax

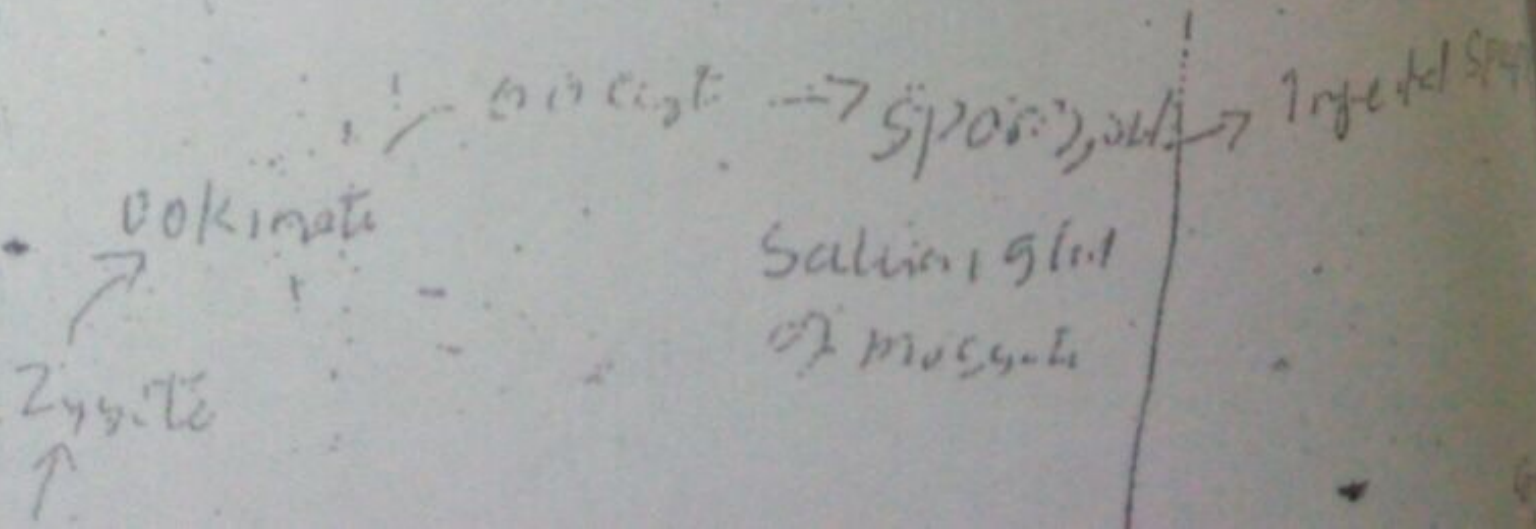
4. Plasmodium Ovale

b) Which parasites have a hepatic cycle.

1. P. Vivax

2. P. Ovale

c) Draw the life cycle of the human malaria parasite. [4 marks]





Reg. No.:

UNIVERSITY OF NAIROBI

UNIVERSITY EXAMINATIONS - 2012/2013

FIFTH YEAR EXAMINATIONS FOR THE DEGREE OF
BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

HME 500: MEDICINE - ESSAY

DATE: NOVEMBER 5, 2013

TIME: 9.00 A.M. - 12.00 NOON

INSTRUCTIONS:

ANSWER ALL THE TEN QUESTIONS

PUT YOUR ANSWERS IN THE SPACE PROVIDED WITHIN THE
ESSAY BOOKLET

WRITE YOUR INDEX NUMBER ON THE FRONT OF EACH ANSWER
BOOKLET YOU USE AND ON TOP OF EACH PAPER WRITTEN ON.

Marking Scheme

* Use as a guide

* final decision rests on the
marker

* Each Question is out of 20

(a) List 5 diagnostically important signs you would expect to find.

[5 marks]

1. Fever

2. Tachypnoea

3. Tachycardia

4. Hypotension

5. Reduced chest expansion/movement

- Pleural rub @

- Dullness - percussion

- Bronchial breath

- Diminished ?

- Confusion

- Skin rash.

(b) Outline 5 investigations you would carry out to confirm the diagnosis.

[5 marks]

1. Chest radiograph

2. Microbiological tests / Any 4 tests - Legionella/S.

3. Sputum - Gram stain, culture, AAB

4. Pleural fluid analysis culture
5. Urea & electrolytes culture

3

A 50 year old man is brought to the emergency room with history of sudden onset of severe headache, neck stiffness and vomiting. He has no fever, and has been well prior to the episode.

- (a) What is the most likely diagnosis? Subarachnoid ^{hemorrhage} [2 marks]
- (b) State 2 differential diagnoses. 1. Acute bacterial meningitis [1 mark]
2. Severe migraine [1 mark]
- (c) What is the investigation of choice CT Scan brain [2 marks]
- (d) State 3 associated underlying causes of the most likely diagnosis.
(i) Saccular "berry" aneurysms
(ii) Arteriovenous malformation
(iii) Bleeding disorder, Brain tumor, acute bacterial meningitis [3 marks]

(e) State 3 additional, useful investigations, and state the utility of each test in his differential diagnosis.

| Test (3 marks) | Utility of the test (3 marks) |
|------------------------------|--|
| (i) <u>CT - angiogram</u> | <u>localisation of aneurysm</u> |
| (ii) <u>MRI - angio</u> | <u>localisation pre surgery</u> |
| (iii) <u>Lumbar puncture</u> | <u>if in doubt for to R/o meningitis Xanthochromia</u> |

(f) In regards to the most likely diagnosis, what is the definitive treatment? [2 marks]

Surgical Clipping

(g) State 3 other supportive aspects of management that are needed [3 marks]

- (i) Pain (Headache) + rest
- (ii) Misoprostol, Control BP, Dexamethasone
- (iii) Care for patient with altered consciousness,
luxating

1. Chest radiograph

2. Serological tests / Agar lysis tests - Legionella/S.

3. Sputum - gram stain, culture, AAB

4. Respiratory fluid analysis

5. Throat nasopharyngeal swabs - culture for organisms such as pneumococci

6. Urine antigen test - Legionella, strep pneumoniae

(c) List 5 bacterial organisms that commonly cause acute lobar pneumonia.

[5 marks]

1. Streptococcus pneumoniae

2. Chlamydia pneumoniae

3. Mycoplasma pneumoniae

4. Haemophilus influenzae

5. Staphylococcus aureus

- Klebsiella pneumoniae

(d) For each of the organism in (c), give the recommended drug for treatment.

1. Strep. pneumoniae - benzylpenicillin / amoxicillin [5 marks]

2. Klebsiella - gentamicin + ceftazidime

8.

A 20 year old woman presents with anasarca for a duration of 3 months. She had been in good health previously. Her urine output is normal, and she has no shortness of breath.

Blood pressure 114/65 mm Hg.

Serum Urea 4.1 mmol/L, Creatinine 89 μ mol/L, K^+ 4.1 mmol/L, Na^+ 129 mmol/L.

Urinalysis shows protein 4+, no casts, no red cells.

(a) What is the most likely diagnosis? Nephrotic Syndrome [1 mark]

(b) List 4 clinical/laboratory features that characterize this condition. [4 marks]

- | | |
|-------------------------------|-----------------------------------|
| (i) <u>Anasarca</u> | (ii) <u>Heavy proteinuria</u> |
| (iii) <u>Hypoalbuminaemia</u> | (iv) <u>Hypercholesterolaemia</u> |

(c) List 6 secondary causes of the condition, in Africa. [6 marks]

- | | | |
|------------------|-----------------------|-----------------------------|
| (i) <u>HIV</u> | (iv) <u>Syphilis</u> | <u>Connective Tissue C.</u> |
| (ii) <u>HBV</u> | (v) <u>P. malaria</u> | <u>Heavy v</u> |
| (iii) <u>HCV</u> | (vi) <u>Malaria</u> | <u>vacc</u> |
- Drugs

(d) List 4 renal related investigations that should be done. [4 marks]

- | | | |
|------------------------------------|-----------------------------|-----------------------|
| (i) <u>24 hr protein excretion</u> | (iii) <u>UPE/Cr</u> | <u>GFR (renal fun</u> |
| (ii) <u>Renal Ultrasound</u> | (iv) <u>Renal Histology</u> | <u>Biopsy</u> |

(e) List 5 complications associated with the condition. [4 marks]

- | | | |
|----------------------------|--------------------------------|--------------|
| (i) <u>Infections</u> | (iv) <u>Hypercoagulability</u> | <u>A/V</u> |
| (ii) <u>Hypertension</u> | (v) <u>Malnutrition</u> | <u>(Iron</u> |
| (iii) <u>Renal failure</u> | <u>Anaemia</u> | |

Bone Disease
Arteriosclerosis (HTN)
disordered drug metabolism

Loss of renal prost. proteins

hormonal pathies

(d) Give 4 relevant investigations and expected findings that would help one make the diagnosis.

Investigation [4 marks]

Expected finding [4 marks]

1. ESR
2. RF
3. CRP
4. Anti-CCP

- elevated
- positive
- elevated
- positive

(e) List 4 drugs that are useful in modifying the course (immunomodulation) of the disease. [4 marks]

1. METHOTREXATE
2. SALICILATES
3. CYCLOSPORINE
4. LEFLUNOMID

- ANTI-TNF - ENBLENCEPT, ADACTALIB, INFliximab
 - ANTI-IL-1 - ANakinra - RIVORANIB
 - IL-6 INHIBITORS - SARICUMAB

1. A 65 year old man presents with a 3 months history of cough, frank haemoptysis and weight loss. He has a 30 pack year history of cigarette smoking. Sputum microscopy and culture is negative for tuberculosis

(a) What is the most likely diagnosis? [1 mark]

Bronchial Ca / Bronchogenic Ca

(b) List 4 diagnostically useful investigations stating the expected finding. [4 marks]

| | Investigation | Results |
|--------------------------------|---------------------------|---|
| Sputum cytology (MRI chest) | (i) <u>Cxray</u> | <u>opacity / upper lobe lesion, extent, 4 nodes</u> |
| | (ii) <u>CT-Scan</u> | <u>Mass size, Cytology, Biopsy</u> |
| | (iii) <u>Bronchoscopy</u> | <u>Mass size, Cytology, Biopsy</u> |
| | (iv) <u>PET Scan</u> | <u>Mass size, Cytology, Biopsy</u> |

(c) Describe the other clinical features that would be indicative of the diagnosis (use the outline i-iv)

(i) General examination. [3 marks]

- Wasting
- finger Clubbing
- Anaemia

(ii) Local effects [4 marks]

- hoarse ness
- wheeze, Horner's
- lung collapse
- Brachial plexus Compression

(iii) Metastatic effects [2 marks]

- Bone (pain etc)
- Liver (enzymes, conjugation)
- B

(iv) Paraneoplastic [3 marks]

- Hyperpigmentation
- Myopathy
- Peripheral neuropathy
- (4) SI A-DH

(d) Outline the approach to the specific management of the condition. [3 marks]

- Surgery - Pneumonectomy if resectable
- Radiation therapy - Curative / Symptomatic
- Palliation - Brachytherapy, laser, stents, Chem
Pain management, Steroid
Psychotherapy

Answer 30/9/20

(a) A 45 year old woman presents with symmetrical arthritis, involving the small joints of the hands of 5 years durations. She gives a history of worsening early morning stiffness. What is the most likely diagnosis? [2 marks]

RHEUMATOID ARTHRITIS

(b) List 5 additional clinical features expected in this patient. [5 marks]

1. RAINFALLS 7 SCOMI

4. SWAN NECK DEFORMITY

5. BOUTANNIER'S DEFORMITY

(b) List 4 priority diagnostic investigations you would carry out, giving rationale for each investigation

Investigation (4 marks)

1. T B C
2. Blood Culture
3. Electrolyte Profile
4. Pelvic Abdominal/Pelvic
ultrasound

Rationale (4 marks)

1. Leucocytosis, Platelets
2. Identification of organism
3. Status of Serum K⁺, Na⁺ level
4. Status of Uterus, Pelvis

(c) List 6 aspects of hospital based treatment required in the patient. [6 marks]

1. Transfusion
Stop Gentamycin

4. Antibiotics
5. Restore normal blood

Aditya 30/07/21

day history of nausea, vomiting and poor feeding. He is dehydrated and hyperventilating. His random blood sugar is 29mmol/l

a) State the likely diagnosis.

[1 mark]

Diabetes ketoacidosis

b) Give 3 other metabolic causes of coma, that occur in patients with his diagnosis.

[3 marks]

1. hypoglycaemic encephalopathy
2. Lactic acidemia
3. hyperosmolar non-ketotic coma

List 4 priority diagnostic investigations, that should be done stating the expected results for each test.

Investigation [4 marks]

1. Electrolytes (K⁺, Na⁺)
2. Blood gases
3. Total blood count
4. Urinalysis

Expected result [4 marks]

1. hypernatraemia
2. Metabolic acidosis
3. leucocytosis
4. Marked ketonuria

List 4 etiological factors that can precipitate this clinical presentation.

[4 marks]

1. Lack of/missed insulin

Post-sinusoidal - (I)

4.

Budd-Chiari
(hepatic vein thrombosis)

(b) State 5 key clinical signs that indicate massive ($> \frac{1}{3}$ blood volume) variceal bleeding. [5 marks]

1. Raised pulse (tachycardia)
2. Low Blood pressure (hypotension)
3. Severe pain
4. Postural hypotension
5. Cold cyanosed peripheries (shock)

(c) List 5 recommended modalities of treatment for active oesophageal variceal bleeding. [10 marks]

1. Sclerotherapy
2. Band ligation

5

A 26 year old woman is admitted with a 3 day history of cough, pleuritic chest pain and fever. She is found to have a temperature of 39.2° pulse rate 106/min, respiratory rate 30 breaths/min and blood pressure 86/50 mm Hg.

- (a) What is the diagnosis? Severe Sepsis / Pneumonia [2 marks]
- (b) List 5 relevant priority, investigations and state the usefulness/expected result of each investigation.

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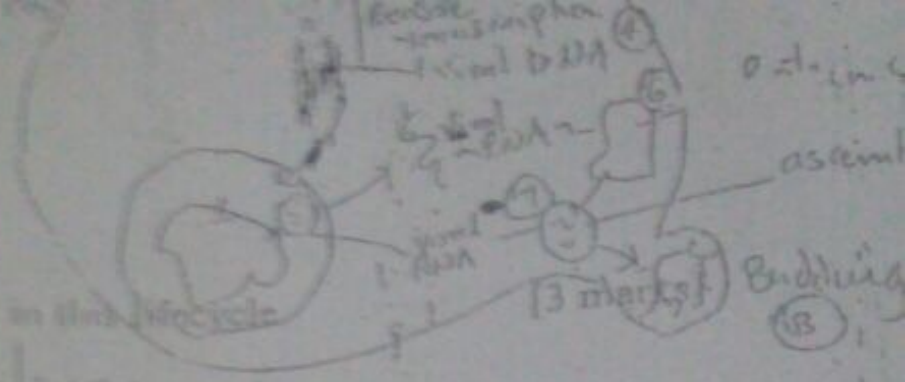
Investigation [5 marks]

Result/usefulness [5 marks]

| | | |
|-------|--------------------------------------|--|
| (i) | <u>Full blood count</u> | <u>high WBC or low WBC ↓ Plt.</u> |
| (ii) | <u>Blood culture</u> | <u>Culture positive to organism like</u> |
| (iii) | <u>Serum lactate</u> | <u>high</u> |
| (iv) | <u>CXR</u> | <u>findings suggest pneumonia</u> |
| (v) | <u>Congestive heart failure</u> | <u>suggest D/C</u> |
| | <u>SP in - Gram stain, Culture -</u> | <u>Possible organism -</u> |
| | <u>WBC</u> | <u>renal dysfunction</u> |

- (c) Outline the relevant aspects of her management (treatment). (Use only the space provided on the same page) [8 marks]

- ICU admission, monitor CVP & BP
- Resuscitation - Airway, Breaths, Circulation
- IV Crystalloids, Vasopressors
- Empiric IV antibiotics - within 1 hr
- Support organs
- - eg dialysis
- - Respiration



Reverse transcription

List 1 of the enzymes involved in this life cycle

1. Reverse transcriptase

2. Integrase

3. Protease

HA RT-IP

NUVIP

PIU RIPP

List 5 classes of drugs that been developed for the stages of the life cycle. [5 marks]

1. Fusion inhibitors - Enf-vir

[5 marks]

2. Nucleoside reverse transcriptase inhibitors

3. Protease inhibitors

4. Reverse transcriptase inhibitors

5. Integrase inhibitors

Nucleoside reverse transcriptase inhibitors
Nucleoside

For each of the following antiretroviral drugs name one specific expected side effect/complication. [7 marks]

Zidovudine (AZT)

1.

Anaemia

Didanosine (DDI)

2.

Pancreatitis

Zalcitabine (DCT)

3.

Lipodystrophy / mitochondrial toxicity

Tamoxifen (TDF)

4.

Nephrotoxicity

Zalcitabine

side effects

5.

Nephrolithiasis

Zalcitabine

6.

Neuro psychiatric

Zalcitabine

7.

Hepatotoxicity / Dermatitis

6

A 28 year old female patient presents with malaise, fatigue, fever, joint pains and weight loss. The symptoms have been on for about 1 month. She has also noted, loss of hair which has become silky and facial rash. She has a history of two mid trimester abortions. She is HIV seronegative, and tests for malaria and typhoid are negative.

(a) What is the most likely diagnosis? SLE [2 marks]

(b) State 8 additional clinical/laboratory features that are helpful in confirming the diagnosis. [8 marks]

- (i) Malar rash, Discoid rash (v) Serositis
- (ii) Photosensitivity (vi) Renal - Proteinuria, casts
- (iii) Oral ulcers (vii) Neuro - seizures, Psychosis
- (iv) Antibody (viii) Immunologic (anti dsDNA, ant ANA Ab)
- Hematologic (↓ WBC, Hemolysis, ↓ Plt)

(c) List 5 classes of drugs used in the management of the condition and give an example in each class.

| Class of drugs [5 marks] | Example of drug [5 marks] |
|---|---|
| (i) <u>Analgesics anti-malarial</u> <u>Cytarabine - Malarial Dis</u> | <u>Hydroxychloroquine</u> |
| (ii) <u>Anti-inflammatory (NSAIDs)</u> | <u>Ibuprofen, Diclofenac</u> |
| (iii) <u>Corticosteroids</u> | <u>Prednisone, Methylpred</u> |
| (iv) <u>Cytotoxic</u> | <u>Cyclophosphamide, Azathioprine</u> |
| (v) <u>Immunosuppressant Ab</u> | <u>Mycophenolate mofetil, Rituximab</u> |

vi) Analgesic
Leftunamide

4. Sepsis

(b) List 4 priority diagnostic investigations you would carry out, giving rationale for each investigation

Investigation (4 marks)

Rationale (4 marks)

1. T B C

Leucocytosis, Platelets

2. Blood culture

Identification of organism

3. Electrolyte Profile

Status of Serum K⁺, Na⁺ levels

4. Pelvic Abdominal / Pelvic
ultrasound

Status of Uterus, Pelvis, ad

(c) List 6 aspects of hospital based treatment required in the patient. [6 marks]

1. Transfusion

4. Antibiotics

2. Stop gentamicin

5. Restore normal Blood P

3. Stop brufenac

6. Hyperemia management,
Conservative / Dialy

... of portal hypertension which are followed by ...

Presinusoidal - (2)

Sinusoidal (2)

Post-sinusoidal

1. Portal hypertension
2. Splenomegaly
3. Hepatocellular carcinoma
4. Cirrhosis of liver
5. Budd-Chiari syndrome
Hepatic vein thrombosis

(b) State 5 key clinical signs that indicate massive GI bleeding.

7. An 18 year old health facility, with IV fluids, referred to the ... severe pallor; B 42mmol/l, cre ...

(a) List 4 fa

(b) List

Inte

9. A 58 year old, known with primary hypertension, with a strong family history of diabetes and non compliant to antihypertensive therapy, presents with a 2 hour history of constrictive chest discomfort, associated with palpitations at rest.

- (a) List 2 possible diagnoses. [2 marks]
- (i) Acute Coronary Syndrome (ii) Acute Decompensated Heart Failure (iii) Aortic dissection

(b) List 4 investigations useful in elucidating the differential diagnosis, and state the utility of each investigation.

- vi) CT Aortogram Investigation [5 marks] Aortic Architecture
Utility [5 marks]
- (i) ECG → ST-T change, myocardial ischemia, atrial fibrillation
- (ii) Cardiac enzymes (CPK/Troponins) → Myocardial necrosis markers
- (iii) Brain Natriuretic Peptide (BNP) → Heart Failure
- (iv) 2D-ECHO → Assess LV function + Right wall motion abnormality
- v) Exercise Stress Test (EST) → Myocardial perfusion study

(c) Outline the additional essential Clinical and Laboratory evaluation of this patient. [8 marks]

- (i) u/e Cr / e GFR (ii) CXR
- (iii) Urinary albumin excretion ratio (UAE) / Proteins (iv) PVD Signs (Peripheral Vascular Disease)
- (v) Lipids (vi) Fundoscopy
- (vii) HbA_{1c}, FBS (viii) Coronary angiography
- (ix) BP measurement
- (x) Heart failure signs

hypero...

List 4 priority diagnostic investigations, list should be done...

- Investigation [4 marks]
1. Electrolytes (K⁺, Na⁺, H⁺)
 2. Blood gases
 3. Total blood count
 4. Urinalysis

Expected result [4 marks]

1. Hypernatraemia, ↓K⁺
2. Metabolic acidosis
3. Leucocytosis
4. Marked ketonuria

List 4 etiological factors that can precipitate this clinical presentation. [4 marks]

1. Lack of / missed insulin
2. Infection
3. Alcohol
4. Myocardial event

(c) List 4 important aspects of the principles of management of this patient.

1. Restore fluid & electrolyte balances / Correct dehydration [4 marks], Treat underlying
If not infected
2. Regular Insulin / control glucose
3. Treat infection
4. Correct el. imbalances - K⁺, Na⁺

4. sepsis

(b) List 4 priority diagnostic investigations you would carry out, giving rationale for each investigation

Investigation (4 marks)

Rationale (4 marks)

1. T B C
2. Blood culture
3. Electrolyte Profile
4. Pelvic Abdominal / Pelvic
ultrasound

- Leucocytosis, Platelets
- Identification of organism
- Status of Serum K⁺, Na⁺ level
- Status of Uterus, Pelvis

(c) List 6 aspects of hospital based treatment required in the patient. [6 marks]

1. Transfusion
2. Stop gentamycin

4. Antibiotics
5. Restore normal blood

1. Plasmodium falciparum

2. Plasmodium Malariae

3. Plasmodium vivax

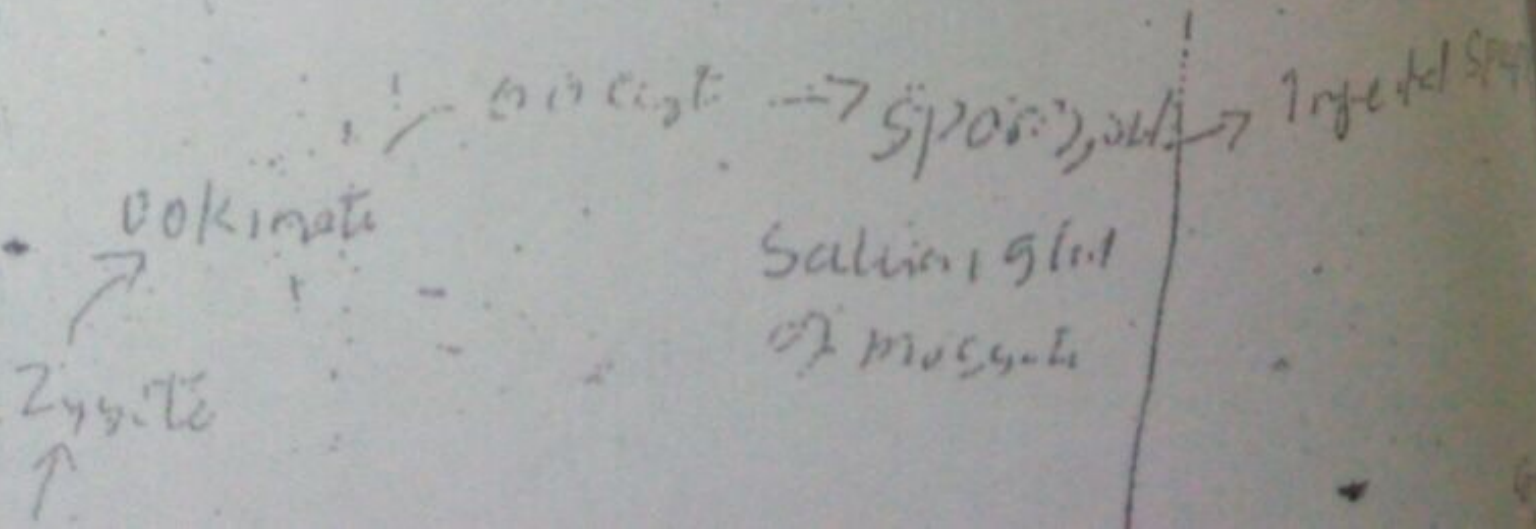
4. Plasmodium Ovale

b) Which parasites have a hepatic cycle.

1. P. Vivax

2. P. Ovale

c) Draw the life cycle of the human malaria parasite. [4 marks]



10. A 45 year old woman develops easy fatigability, reduced exercise tolerance, anorexia and dysphagia over several months. Examination reveals severe pallor and flat finger nail.

(a) What is the most likely diagnosis? Iron deficiency Anemia [1 mark]

(b) List 5 common causes of this condition in this country. [5 marks]

- | | | | |
|-------|-----------------------------|------|---------------------------|
| (i) | <u>Hookworm</u> | (iv) | <u>Poor diet</u> |
| (ii) | <u>Peptic Ulcer Disease</u> | (v) | <u>Pregnancy</u> |
| (iii) | <u>Gut Malignancy</u> | | <u>menstrual/Gut loss</u> |
| | <u>Haemorrhoids</u> | | <u>etc</u> |

(c) List 5 priority investigations and the expected findings in evaluating this condition

| | <u>Investigations [5 marks]</u> | <u>Expected finding [5 marks]</u> |
|-------|---------------------------------|-----------------------------------|
| (i) | <u>TBC / Film</u> | <u>Hb ↓, MCV ↓ Hypochrom</u> |
| (ii) | <u>Serum ferritin</u> | <u>reduced</u> |
| (iii) | <u>Serum Iron</u> | <u>reduced</u> |
| (iv) | <u>Stool</u> | <u>O/c Hookworm, O/B</u> |
| (v) | <u>Upper/lower GI endoscopy</u> | <u>-- Site of bleed</u> |

Bone marrow
- negative Prussian Blue % Transferrin saturation Pelvic ultrasound

(d) Outline 4 aspects of management in relation to the most common cause in this country. [4 marks]

- | | |
|-------|-------------------------------------|
| (i) | <u>De worm</u> |
| (ii) | <u>Iron therapy 100%o oral / iv</u> |
| (iii) | <u>Transfusion - Symp to make</u> |
| (iv) | <u>Public health - Toilets</u> |

A 45 year old HIV positive patient presents with severe headache and low grade fever for over 2 weeks. Examinations reveal neck stiffness among other clinical features. Investigations show normal WBC count CD4 50 cells/ml. CSF studies exclude TB and viral infections.

(a) What is the most likely diagnosis.

[2 marks]

Cryptococcal meningitis

(b) List 2 investigations on CSF that would confirm the diagnosis.

[2 marks]

India Ink

Cryptococcal antigen

(c) List 2 likely complications (excluding death)

[2 marks]

Blindness

- hydrocephalus

- seizures

- renal

2

(a) Name the aetiologic agent of tetanus [1 mark]
Clostridium tetani

(b) With an example for each, describe the characteristic 'triad' that explains the clinical presentation in the patient with tetanus. [3 marks]

| Triad | Clinical presentation - example |
|-----------------------------|--|
| (i) Rigidity | neck stiffness, episthotonus |
| (ii) Spasm | Risus sardonicus, Trismus, lockjaw |
| (iii) Autonomic dysfunction | Tachycardia, hypertension, bradycardia, sweating |

(c) Describe 3 clinical forms of tetanus. [3 marks]

- (i) Generalised 2° to haematogenous spread of toxin
- (ii) Local - Confined to site of injury
- (iii) Cephalic - following lacerations to head and neck

(d) List 3 differential diagnoses of tetanus. [3 marks]

- (i) Bacterial meningitis
- (ii) Hypocalcaemia tetany
- (iii) Strychnine poisoning
- (iv) epilepsy
- (v) rabies
- (vi) hysteria
- (vii) perfringens
- (viii) rabies
- (ix) he.

(e) Outline 5 principles in the management of a patient with tetanus. [5 marks]

- (i) Neutralise unbound toxin - Tetanus immunoglobulin
- (ii) Remove source of infection - debride, Penicillin
- (iii) Control rigidity/spasm - Benzodiazepines
- (iv) Control autonomic dysfunction - sedation, β -blockers
- (v) Supportive - feeds, air way, Intensive care.

(f) List 4 complications that can occur [4 marks]

- (i) Rhabdomyolysis
- (ii) Aspiration pneumonia
- (iii) Pulmonary embolism
- (iv) fractures
- (v) Contractures
- (vi) Joint ankylosis
- (vii) Malnutrition

(g) Outline 1 preventive strategy. [1 mark]

Tetanus toxoid Immunisation

5. inadequate dietary 5. Malaria
intake.

(c) List 4 additional investigations you would do to confirm the diagnosis and the expected findings.

Investigation [4 marks]

Expected finding [4 marks]

1. Periphera Blood Film

Microcytic Hypochromic

2. Ferritin level

Low

3. Fer levels

Low

4. Haematocrit

Low

5. Hb electrophoresis

(TIBC, transferrin)

(d) List 3 investigations you would do to evaluate for the common causes.

1. Endoscopy / Colonoscopy

3. Urinalysis

2. Stool o/c

Pelvic u/s

(e) List 3 aspects of treatment that would be essential in her management.

1. Transfusion of blood

3. Iron supplement

2. Stop or treat

the cause

or dietary