Benha University  
Faculty of Medicine

Master degree of Gast.hep&inf.D  
Int. med. Course exam. 14-6-2012

Time allowed 3 hour  
Number of papers: 2

Model Answer

1 – thyroid & liver ( 5 interrelations ):

I- thyroid abnormalities in liver diseases

0 autoimmune liver disease ( AIH ) : autoimmune hypothyroidism , grave's are relatively common

0 cirrhosis : a low serum total and free T3 and elevated r T3  d.t deceased 5\ deiodinase activity

0 acute hepatitis :increased total T4 with normal free T3 d.t increased TBG

0 Alpha interferon used in ttt of hep C , B may lead to thyroid dysfunction

II- liver abnormalities in thyroid diseases

0 hyperthroidism : - hepatic injury with elevated AST,ALT d.t relative hypoxia of perivenular region due to increased o2 demand without appropriate incraease in hepatic blood flow

- cholestatic injury with elevated ALP and jaundice d.t HF , sepsis

- methimazole, propylthiouracil are hepatotoxic

0 hypothyroidism

Cholestatic jaundice d.t decreased bilirubin excretion

III condition affecting both simultaneously

0 Non-Hodgkin lymphoma

0 amyloidosis
Amiodarone leads to liver fibrosis, hypo or hyperthyroidism.

2 Non-infectious causes of encephalopathy (7 causes):

There are many causes of encephalopathy. Some examples include:

- **Mitochondrial encephalopathy**—Metabolic disorder caused by dysfunction of mitochondrial DNA. Can affect many body systems, particularly the brain and nervous system.
- **Glycine encephalopathy**—A genetic metabolic disorder involving excess production of glycine.
- **Hepatic encephalopathy**—Arising from advanced cirrhosis of the liver.
- **Hypoxic ischemic encephalopathy**—Permanent or transitory encephalopathy arising from severely reduced oxygen delivery to the brain.
- **Uremic encephalopathy**—Arising from high levels of toxins normally cleared by the kidneys—rare where dialysis is readily available.
- **Wernicke's encephalopathy**—Arising from thiamine deficiency, usually in the setting of alcoholism.
- **Hashimoto's encephalopathy**—Arising from an autoimmune disorder.
- **Hypertensive encephalopathy**—Arising from acutely increased blood pressure.
- **Chronic traumatic encephalopathy**—Progressive degenerative disease associated with multiple concussions and other forms of head injury.
- **Toxic encephalopathy**—A form of encephalopathy caused by chemicals, often resulting in permanent brain damage.

3- proteinuria (def., 5 causes, 5 sequale):

Proteinuria is defined as urinary protein excretion of more than 150 mg/day.

5 types:

i- glomerular proteinuria

- due to increased glomerular permeability

  as - minimal change disease, MPGN, Ig A nephropathy, DM, amyloidosis.

ii- tubular proteinuria

- due to decreased proximal tubular reabsorption of normally filtered proteins, usually less than 2 gm/day

  as hypertensive nephrosclerosis, acute tubular necrosis, tubulo-interstitial diseases (interstitial nephritis, urate nephropathy, NSAIDS, sickle cell, fanconi)
iii- overflow proteinuria

due to increased production of low molecular weight proteins

as Bence-Jones proteinuria in MM, hemoglobinuria in intravascular hemolysis, myoglobinuria in rhabdomyolysis

iv- orthostatic (postural) proteinuria as in pregnancy

v- functional as in fever, CHF, stress, anaemia, exercise

vi- false proteinuria, due to loss of protein from lining of UT as infections, hematuria

5 sequelle

i- increased incidence of infections

ii- anaemia

iii- atherosclerosis d.t hyperlipidemia

iv- hypercoagulable states d.t loss of antithrombin iii, hypovolemia and increased coagulating factors

v- attacks of abdominal pain (nephritic crisis)

vi- PT dysfunction

vii- renal failure (acute or chronic)

4 -10 non-cardiac causes of chest pain:

i- GERD

substernal may radiate to neck, burning, 10-60 min, posprandial, relief with antacids, associated with water brash

ii- herpes zoster

dermatomal distribution, burning, prolonged, associated with vesicular rash

iii- musculoskeletal disorders

variable in location, aching well localized, variable duration, aggrevated by movements, history of exertion or injury, tender on palpation

iv- gallbladder diseases
Rt. Hypochondrium, visceral, prolonged, spontaneous or following meals. Rt. Upper quadrant tenderness.

v- anxiety states

localized over precordium, variable duration often fleeting, situational, sighing respiration

vi- peptic ulcer

epigastric, visceral burning, prolonged, relief with food, antacids

vii- spontaneous pneumothorax

unilateral, sharp, well localized, sudden onset lasts many hours, aggravated by breathing, associated with dyspnea, hyperresonance

viii- pneumonia with pleurisy

located over involved area, pleuritic stitching, aggravated by breathing, associated with dyspnea, cough, fever, dullness on percussion and pleural rub

ix- pulmonary infarction

over area of infarction, pleuritic, sudden onset, aggravated by deep breathing, associated with dyspnea, tachypnea, tachycardia, hemoptysis, pulmonary hypertension, rub

x- pulmonary HTN

substernal, pressure, aggravated by efforts, associated with dyspnea, low CO, signs of pul. HTN.

5 - hypercoagulable state ( def. , 10 causes )

A disorder of the coagulation system that can be acquired, inherited, or result from an interaction of both acquired and inherited disorders that predisposes an individual to the formation of thrombosis.

Causes

- Acquired causes:
  - Immobilization
  - Surgery
  - Malignancies (especially pancreatic, liver, and ovarian)
  - Pregnancy
  - Puerperium
  - Exogenous female hormones/oral contraceptives
  - Smoking
  - Presence of residual thrombosis
  - Heart failure
  - Hyperviscosity syndromes (sickle cell, polycythemia, paraproteinemias)
• Hyperhomocysteinemia secondary to vitamin deficiencies (B6, B12, folic acid)

• Inherited (Established genetic factors):
  o Factor V Leiden
  o Prothrombin G20210A mutation
  o Protein C deficiency
  o Protein S deficiency
  o Antithrombin III deficiency
  o Antiphospholipid syndrome

• Rare genetic factors:
  o Dysfibrinogenemia
  o Hyperhomocysteinemia (methylene tetrahydrofolate reductase [MTHFR] mutation)

6- Non-articular manifestations of Rheumatological disorders:

i- mucocutaneous

  0 mouth ulcers
  0 malar rash
  0 discoid rash
  0 urticaria
  0 vitiligo
  0 digital ulcers

ii- CVS

  0 pericarditis, pericardial effusion
  0 myocarditis
  0 valvular heart diseases
  0 premature atherosclerosis
  0 vasculitis
  0 conduction system abnormalities

iii- pulmonary

  0 pleurisy . effusion
  0 ILD
0 pulmonary nodules
0 alveolar hemorrhage
0 pulmonary emboli

iv- Renal

0 GN
0 proteinuria, cellular casts

v- GIT

0 pancreatitis
0 reflux oesophagitis
0 intestinal hypomotitity
0 hepatitis

vi- Neurological

0 psychosis
0 seizures
0 headache
0 P.N
0 transverse myelitis
0 cerebritis
0 depression

vii- ocular

0 conjunctivitis
0 scleritis
0 episcleritis
0 uveitis

viii- hematologic
0 anaemia
0 thrombocytopenia
0 leukopenia, lymphopenia

ix- general features
0 fever
0 malaise
0 wt. loss
0 sweating, fatigue

x- maternal and fetal complication , recurrent abortions

7 – liver & pulmonary disorders (5 inter-relation):

i- effect of the liver on pulmonary

1- hepato – pulmonary syndrome

- is a syndrome of shortness of breath and hypoxemia (low oxygen levels in the blood of the arteries) caused by vasodilation (broadening of the blood vessels) in the lungs of patients with liver disease. Dyspnea and hypoxemia are worse in the upright position (which is called platypnea)

- Currently the only definitive treatment is liver transplantation

2- pleural effusion

In patients with decompensated liver cirrhosis (lcf) due to hypoalbuminemia, also passage of fluids from ascites through defects in the diaphragm (Rt. Side mainly)

ii- effect of pulmonary diseases on the liver

3- COPD

- lower border of the liver may be palpable as the liver is ptosed by low flat diaphragm (not tender)

- tender hepatomegaly (congested liver) due to cor pulmonale

4- bronchogenic carcinoma
Via hematogenous spread to liver leading to liver metastases

Liver is enlarged, tender, hard in consistency with jaundice

5- INH, rifampicin, pyrazinamide used in ttt of pul. TB are hepatotoxic

iii- association

6- alpha one antitrypsin deficiency ( AAT )

- AR disorder resulting in abnormal low serum alpha 1 AT, Which is protease inhibitor, leading to emphysema and hepatic dis.( cholestatis or jaundice )

8- Describe briefly 3 types of comas in diabetic patients:

i- hypoglycemic coma

   Effects Type 1 & 2 Diabetic

   Secondary to Insulin or Oral Hypoglycemic Medication

   Serum Glucose Levels Fall Below Normal Levels

   Chch by neuroglycopenic and neurogenic manifestations

   Ttt by glucose supplementation, glucagon

ii- DKA ( Diabetic ketoacidosis )

   common in type I DM ( IDDM )

   In an attempt to save the Heart and Brain, the body produces Ketone Bodies from fatty acids( Acetoacetate, Beta-hydroxybutyrate, And Acetone)

   Excessive Ketones lead to Acidosis

   Chch by nauses, vomiting, abdominal pain, polyuria, kaussmul breathing, acetone odour of breath and hypovolemia

   Ttt by fluids, insulin, correction of electrolytes and acidosis

iii-hyperglycemic hyperosmolar non-ketotic coma ( HHNK )
Effects Type 2 Diabetics, rare in type I

Prominent later in life

Elevated Blood Glucose lead to increases serum osmolarity

This results in Diuresis and Fluid Shift.

Increased Urination causes body wide depletion of Water and Electrolytes

No acidosis

Ttt by fluids and insulin
MCQ (10 marks):

All questions answered by (false) or (true):

1. The pain of myocardial ischemia:
   a) Is typically induced by exercise and relieved by rest.
   b) Radiates to the neck and jaw but not teeth.
   c) Rarely lasts longer than 10 seconds after resting.
   d) Is easily distinguished from esophageal pain.

2. In infective endocarditis
   a) Streptococci and staphylococci account for over 80% of cases
   b) Left heart valves are more frequently involved than right heart valves
   c) Normal cardiac valves are not affected
   d) Glomerulonephritis usually occurs due to immune complex disease

3. Finger clubbing is atypical finding in:
   a) Chronic bronchitis
   b) Bronchiectasis
   c) Primary biliary cirrhosis
   d) Crypto genie fibrosing alveolitis

4. Mediastinal opacification on the chest X-ray is atypical features of
   a) Thymoma
   b) Retrosternal goiter
   c) Pancoast tumour
   d) Hiatus hernia

5. The following statements about the cerebrospinal fluid a healthy person are correct:
   a) Opening pressure is 50-180 mm/H20.
   b) Glucose is usually <25% of blood level.
   c) Protein content is usually <0.5 g/L.
   d) White cell count is usually <4 mm$^3$.

6. Clinical features of hyperkalaemia include
   a) Tall peaked T waves and ST depression on isCQ
   b) Asystole and ventricular fibrillation
   c) Peripheral paraesthesiae
   d) Widening of the QRS and conduction defects on ECG

7. The following can be manifestations of vitamin B1 deficiency:
   a. Red eyes
   b. Wemicke's encephalopathy
   c. Peripheral neuritis
   d. Heart failure
8. The following statements about goiter are true
   a) onset in later life favours a diagnosis of thyroid carcinoma
   b) hypothyroidism favours a diagnosis of Hashimoto's thyroiditis
   c) deafness in childhood suggests a diagnosis of dyshormonogenesis
   d) thyroxine treatment for associated hypothyroidism causes goiter enlargement

9. Secondary diabetes is associated with:
   a) Thiazide diuretic therapy
   b) Haemochromatosis
   c) Primary hyperaldosteronism
   d) Pancreatic carcinoma

10. Microscopic haematuria would be an expected finding in:
    a) Urinary tract infection.
    b) Renal papillary necrosis.
    c) Membranous glomerulonephritis.
    d) Infective endocarditis.