Tutorial assignment

Use "Clinical pharmacy & therapeutics, Walker & Whittlesea" or "Essential Haematology" as a reference textbook.

N.B. Untidy reports lose marks.

- The PT is responsive to reduction of vitamin K dependent factors, so measuring PT is the most commonly used monitor of oral anticoagulation therapy.

What does PT stand for? What is the unit used to express this parameter? What is its normal value?

- Define INR.

- Do you expect the INR of a patient on Warfarin to be less, equal, or higher than one? Justify your answer.

- Multiple choice question: Potentiated Warfarin effect would result in............. (longer- non changed- shorter) PT and....................(higher-lower-non changed) INR value.

Haematological changes in liver disease

- Why would patients with acute and chronic liver disease develop spontaneous bleeding?

- What is the most frequently used indicator (lab test) of defective clotting factor's synthesis in liver disease? How would the test's result change in such disease?

- Because vitamin K is fat soluble, patients with fat malabsorption, especially in biliary obstruction or hepatic disease, may become deficient:

What form of Vitamin K would you choose for oral administration to prevent vitamin K deficiency in malabsorption syndromes; Phytomenadione or menadiol sodium phosphate? Justify your answer?

Mention one trade name for such vitamin K form in the Egyptian market.
- Why is it important to monitor platelet count during Heparins therapy? How often should it be performed?

- When do you suspect occurrence of Heparin induced thrombocytopenia (HIT)? What is the clinical alternative of Heparin in case of HIT?

- Which type of Heparins more occasionally causes HIT?

- State another possible adverse effect for Heparin.

Specify 4 conditions which may require I.V Iron replacement therapy.

- Some parental Iron products may require administering a test dose first, before the therapeutic dose. Mention an example.

Why is this test dose important?

- Some medication classes may interact with oral Iron replacement therapy.

Mention names of three different classes.

What is the possible mechanism of interaction for each class?

- Mention 3 different conditions where prophylactic iron replacement may be required.

- Mention 3 different diseases in which bleeding may lead to iron deficiency anemia.

- What is the route of administration of UFH?

- Mention: generic name (including salt form), trade name, dosage form, storage conditions and price of UFH in Egyptian market?

- What is the route of administration of LMWHs?

- Mention: generic name (including salt form), trade name, dosage form, storage conditions and price of one LMWH in Egyptian market?
- Clarify, using a table, two desirable pharmacokinetic features that distinguish LMWHs from UFH?
- How do these clinical features affect the clinical use of both therapies?

- There are 3 generic names of oral anticoagulants; why is one agent preferred over the others?
- Concerning the most commonly used oral anticoagulant, mention available strength(s), dosage form and trade name.

- What is the pharmacokinetic reason that makes drug interactions a potential problem during Warfarin therapy?
- Mention names of three therapeutic classes of medications that either potentiate or inhibit the anticoagulant effect of Warfarin? What is the possible mechanism for each of these interactions?

- There are 3 generic names of oral anticoagulants; why is one agent preferred over the others?
- Concerning the most commonly used oral anticoagulant, mention available strength(s), dosage form and trade name.

- The major adverse effect of all Heparins is haemorrhage.
Enumerate three factors or conditions that increase the rate of incidence of such adverse event?
- Locate a possible site of such bleeding in the body.
- Mention the name of the laboratory test that monitors UFH activity? What is the desirable range of the result?
- What is the laboratory test used to monitor the effect of Warfarin? What is the optimum therapeutic range of the result?

- Why does Heparin therapy may continue even though warfarin therapy could have been already started? When should Heparin therapy be stopped?

- How would you interpret results above or below normal for such test?

- What is the pharmacokinetic reason that makes drug interactions a potential problem during Warfarin therapy?

- Mention names of three therapeutic classes of medications that either potentiate or inhibit the anticoagulant effect of Warfarin? What is the possible mechanism for each of these interactions?

- Mention three different generic names of medications that either potentiate or inhibit the anticoagulant effect of Warfarin?

- Assume that, for a patient on Warfarin, his profile lists each of the previous 3 medications in the patient’s history section.

What would be your recommended intervention to prevent the interaction resulting from each medication?

- Could Warfarin be given during pregnancy? If not, why? What is its pregnancy category?

- What is the appropriate therapeutic substitute, if Warfarin cannot be administered during pregnancy?

- Warfarin’s overdose or potentiated activity may lead to a serious adverse event? What is the expected adverse event?

Mention a generic and trade name for a drug that is given to stop this event?

- Examine 1 common conventional release solid oral iron products in the Egyptian market. Determine: trade name, dosage form, iron salt form (anion counter ion), equivalent elemental iron content, manufacturer’s name, price, and minimal therapeutic dose. (5 marks)

You should bring a photocopy of the product’s insert or otherwise suitable reference.
As a pharmacist you are required to contribute in the treatment plan for a patient with iron deficiency anemia.

- State two drug-drug interactions for ferroton® capsules; what is the mechanism behind each of these DDIs? What would be your intervention to solve each interaction?

- Examine 1 common parenteral iron products in the Egyptian market. For each determine: trade name, type of parenteral administration, iron salt form (anion counter ion), equivalent elemental iron content, manufacturer’s name, price, and minimal therapeutic dose.

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- Examine 1 common modified release (M.R) oral iron product in the Egyptian market; determine: trade name, dosage form, iron salt form (anion counter ion), equivalent elemental iron content, manufacturer’s name, price, and minimal therapeutic dose.

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- Examine one oral iron product available as sachets in the Egyptian market; determine: trade name, dosage form, iron salt form (anion counter ion), equivalent elemental iron content, manufacturer’s name, price, and minimal therapeutic dose.

You should bring a photocopy of the product’s insert.

- Examine one oral iron product available for neonates and infants (below 2 years of age) in the Egyptian market; determine: trade name, dosage form, iron salt form (anion counter ion), equivalent elemental iron content, manufacturer’s name, price, and minimal therapeutic dose.

You should bring a photocopy of the product’s insert.
Examine one oral liquid iron product available for adults' administration in the Egyptian market; determine: trade name, dosage form, iron salt form (anion counter ion), equivalent elemental iron content, manufacturer's name, price, and minimal therapeutic dose.

You should bring a photocopy of the product's insert.

- What is the proof of Pancytopenia from the patient's record? Why does this condition may accompany megaloblastic anaemias?

- Would the patient develop reticulocytosis as a result of his anaemia? What is the significance of such result in relation to the mechanism of anemia?

- What confirmatory tests can be done to specify diagnosis? Clarify the expected changes if it’s a case of folate deficiency anaemia?

- What is the expected serum ferritin level of this patient?

- Mention generic names of 2 drugs that can be implicated in causing folate deficiency anaemia?

"Mild jaundice may be present due to the increased breakdown of Hb found in the abnormal red cells in folate deficiency anemia" Mention to lab test results that reflect increased hemolysis?

- Which product would you choose as replacement therapy for folate deficiency anaemia: Folicap® 0.5 or Folic acid® 5? Why? What could be a possible indication for the other product?

Why patients suffering from pernicious anaemia should administer Vitamin B12 as replacement therapy?

Could Tri-B® tablets be suitable for them? Why?

Mention the trade names of 2 suitable products with different dosage forms and routes of administration in the Egyptian market?
How would you monitor success of megaloblastic anemia therapy using lab tests?

- What clinical sign or symptom can differentiate between F.A and V B12 deficiency anaemias?
- What type of anaemia could strict vegetarians develop over long time? Why?

- Define these terms in common use in haematology: Anisocytosis, Polycythemia, and Poikilocytosis.
- What are reticulocytes?
- Why is the reticulocyte count sometimes useful in assessing response to treatment of some anemias? Provide an example.

- What does PCV stand for?
- Mention another name for the PCV test. Why is it always less than one?
- Name two abnormal Haemoglobin types that could be detected by electrophoresis along with their corresponding diseases.

- Interpret (mention the expected result and what does it reflect) the lab values of the following indices for a thalassemia patient at time of diagnosis; Hb, MCV, MCH, reticulocyte count.
- Mention one type of anemia that could be confused with Thalassemia on the basis of the red cell indices (i.e. a differential diagnosis)? How could a lab test distinguish between the 2 conditions?

- The medication history of a Thalassemia patient includes the following: Eltroxin (Thyroxine).
  Mixtard 30/70 40 IU (Biphasic insulin)
What would be the most probable indication in this case? Why do these indications develop in Thalassemia patients?
- Target Hemoglobin level after blood transfusions in Thalassemia. **What is hemosiderosis and why** does it develop in thalassemia patients.

- What is the main risk resulting from splenectomy in thalassemia patients? What are the recommended pharmacological measures to avoid such risk? Mention name of the class and an example in each.

- Why is Folic acid given in Thalassemia? Which product would you choose, Folicap® 0.5 or Folic acid® 5?

- Concerning an injected iron chelator; mention generic name, trade name in Egyptian market, dosage form, dosage regimen, route of administration and common adverse events.

- Mention Generic and trade names of an oral iron chelator. Why better patient compliance is achieved with it?

- What procedure could represent a cure for Thalassemia patients?

- G6PD deficiency anaemia:

  A customer enters your pharmacy to fill a prescription; he tells you: "please take care dr, I have anaemia El Fool..."

  Mention four common drugs implicated in causing haemolysis in G6PD anaemia?

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- What is the drug of choice for treating chronic leukemias? What is the major advantage of this drug?
- What is the mechanism of action of this drug?
- Mention its trade name, manufacturer name and price in the Egyptian market
- What is the proof of Pancytopenia from the patient's record? Why does this condition may accompany megaloblastic anaemias?

- Would the patient develop reticulocytosis as a result of his anaemia? What is the significance of such result in relation to the mechanism of anemia?

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- What is the pharmacokinetic reason that makes drug interactions a potential problem during Warfarin therapy?

- Mention names of three therapeutic classes of medications that either potentiate or inhibit the anticoagulant effect of Warfarin? What is the possible mechanism for each of these interactions?
- What is the laboratory test used to monitor the effect of Warfarin? What is the optimum therapeutic range of the result?

- Why does Heparin therapy may continue even though warfarin therapy could have been already started? When should Heparin therapy be stopped?

- How would you interpret results above or below normal for such test?

- Because vitamin K is fat soluble, patients with fat malabsorption, especially in biliary obstruction or hepatic disease, may become deficient:

What form of Vitamin K would you choose for oral administration to prevent vitamin K deficiency in malabsorption syndromes; Phytomenadione or menadiol sodium phosphate? Justify your answer?

Mention one trade name for such vitamin K form in the Egyptian market.

- Why is it important to monitor platelet count during Heparin's therapy? How often should it be performed?

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Examine one oral iron product available for neonates and infants (below 2 years of age) in the Egyptian market; determine: trade name, dosage form, iron salt form (anion counter ion), equivalent elemental iron content, manufacturer's name, price, and minimal therapeutic dose.

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- What does the "Induction" phase of acute Leukemia aim to? How could it be done?
- Postremission "consolidation/Intensification" phase may depend on chemotherapy or a combination of chemotherapy, radiotherapy and bone marrow transplantation. What is the importance of this phase in acute Leukemia treatment?

- What is the last phase of acute leukemia treatment? What is its aim?

- Concerning an injected iron chelator; mention generic name, trade name in Egyptian market, dosage form, dosage regimen, route of administration and common adverse events.

- Mention Generic and trade names of an oral iron chelator. Why better patient compliance is achieved with it?

- What procedure could represent a cure for Thalassemia patients?

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What is the possible mechanism of interaction for each class?

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