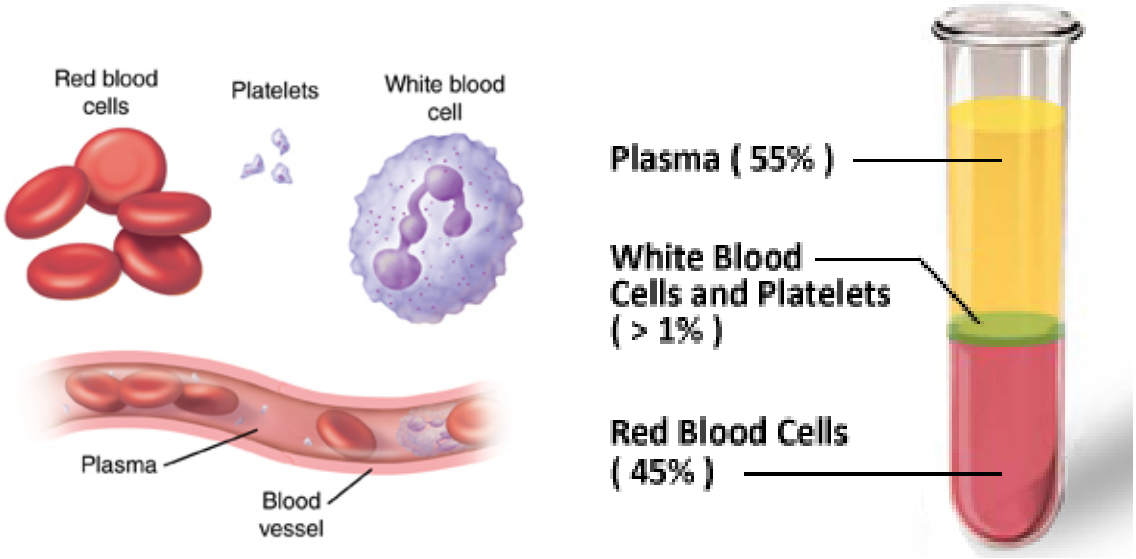
AJK Medical College, Muzaffarabad

STUDY GUIDE

Haematology & Oncology Module

(5th Year MBBS)



Module Code: 0317
Duration: 2 Weeks

Starting on:

DEPARTMENT OF MEDICAL EDUCATION
CONTENTS

Module Team

1.	Dr. Javed Akhtar Rathore	Planner
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7.	Dr. Naeem Ahmed	Member
8.	Dr. Malik Mahmood	Member

Rationale

Blood is a hybrid of cellular and fluid components.It perform very important role in delivering nutrients, removing waste products, regulating body pH and temperature, body defense and hemostasis.

Host defense identify foreign microorganisms/molecules and utilize oxidants, proteases, and other moieties to protect the host. We will see how these functions can go wrong and what affects they produce on human body and approach to treat such conditions

Bone marrow produces almost all cellular blood components. The bone marrow failure leading to pancytopenia include anemia, infection and bleeding. The students will learn, how these effects are produced and what management principles are?

The acute leukemias are malignancies in a hematopoietic stem cell and are rapidly fatal without immediate treatment. Stem cell transplantation is a treatment of choice for some patients with hematologic malignant tumour . Students will learn how these disorders occur and go through modalities of management

Activation of the coagulation system is essential to keep us from bleeding to death.Patients with inherited and acquired bleeding disorders requires screening tests of hemostasis These tests are sufficiently sensitive to be abnormal in most patients with a hemostatic defect. Students will become familiar with diagnosis, investigations and management principles of these disorders.

Knowledge of blood transfusion indications and its complications is essential to selecting appropriate transfusion therapy. Appropriate selection and use of plasma, coagulation components and blood derivatives can be life-saving. Inappropriate use of blood components is costly, wastes a scarce resource, and can expose patients to unnecessary hazards.In spite of stringent donor screening and extensive laboratory testing, blood still can transmit infectious

diseases. We have knowledge of 4th years and now students will critically look into practical aspects of transfusion medicine in addition to knowledge of disease requiring it.

Oncology

Modern treatment of cancer with different modalities like surgery, chemotherapy.biological therapy and radiation therapy results in cure of two of three patients .In 2002,11 million new cancer case and 7 million death were estimated worldwide .If segregated 45%in Asia,26% in Europe,14%in North America,7.1% in Central/South America,6% in Africa and 1%inAustralia/Newzeland were observed. Lung cancer is most common followed by breast cancer. Other cancer like 6stomach, colorectal, pancreatic and liver cancer are also prevalent in our country.So students should have core knowledge of common tumours.

The core contents of this module are organized into 6 themes and clinical cases will be learned/taught during LGIS and actual scenario in wards.

Competencies:

- Medical knowledge
- Patient care
- Communication skills

Organization of Module:

The module consists of six themes, including Hematologic and ontological disorders and; each based on actual conditions. Each theme has its explicit Learning Objectives (LOs). The module will employ different modes of instruction, briefly described below. Major emphasis will be on real life patient examination, discussion, laboratory investigation and interpretation, case analysis, diagnosis, deductions and management; all by the students and guided by the faculty members .

Each theme in this module is augmented with a clinical scenarios in wards. The clinical presentation of themes will give you a clue that how a patient presents in a real life situation and to draw a conclusion from the information given by the patient and signs elicited by your clinical examination. This needs comply to time table for more details regarding organization of learning activities.

Teaching Strategies:

The content of this module will be delivered by a combination of different teaching strategies. These include small group discussions (SGD) in wards, large group interactive sessions (LGIS), history taking, patient examination, laboratory investigations and tests interpretation, clinicopathological conferences (CPCs) as seminar, and discussions. Entire curriculum will be delivered by clinical case scenarios in wards ,each covering a theme. Read the cases and the objectives of the theme as assigned by your teacher relevant to your curriculum which you are supposed to encounter next day, understand and explain the case to yourself and study the relevant information. The students will present clinical cases based on scenarios themselves and the relevant radiological and pathological features. Following learning/teaching strategies will be used in Hematology Module:

Small Group Discussion (SGD) in wards:

Part of the course content will be delivered in small group sessions. Each theme has an associated case. The case will be centered around which learning will take place. Every group will have a facilitator assigned to it. The facilitator will be there to keep you on track, giving you maximum liberty to discuss and achieve the objectives as a group. Small groups will be followed by a wrap up session to standardize learning. Rest of the information will be in the schedule/ time table.

Large Group Interactive Sessions (LGIS) in college:

LGIS will be employed at times to augment small groups. By and large they will be used to pass on general concepts regarding the theme. Large group instruction will be employed at times sparingly. Attend large group sessions with the following focus:

- Identify important points.
- Ask questions on concepts not well understood in the text books.
- Measure your learning comprehension

Clinicopathological Conferences (CPCs) or seminars :

The students will be required to present case related to the theme in group. They will collect the information about the different facets of patient's disease and present to the whole class with the help of appropriate hematological, radiological and clinical slides. It will be followed by question, answer and discussion.

Practical Skills:
Selection of tests, collection of the specimen, history & examination of patients and interpretation of information/disease, specimens/test reports, microscopic slides, and radiological images will be taught /extracted in wards.

Self-Directed Learning(SDL):
A task/concept will be given in SDL regarding the theme to be discussed before PBL. This will help to prepare you a bit before the theme is under discussion. A few SDLs have been added in between to create an environment for you to search literature as well as to deduce and synthesize information from different sources to meet the learning objectives.

Assessment:
In this module, you will have formative and summative assessment. This will give you an idea about the format of the examination that you will go through at the end of the year. This will be followed by feedback on your performance in the exam. Marks obtained in the module examination will contribute 30% (internal assessment) towards end of year Professional University Examination.**There is no re-sit exam for module written assessment and block IPE** under any circumstances. If you miss them, your internal assessment will be recorded as zero. No excuse of any kind is permissible for absence in module or IPE assessment.

Table of Specifications (TOS)

Themes/ Core content

1	Anemia	40%
2	Acute Myeloproliferative & Lymphoproliferative disorder	10%
3	Chronic Myeloproliferative & lymphoproliferative Disorder	25%
5	Disorders of Bleeding and coagulation	25 %

Learning Objectives
At the end of the theme students will insha Allah be able to:

Theme-1 Anemia

a) General approach and diagnosis

1- Define anemia
2- List common causes of anemia
3- Classify anemias on the basis of pathophysiology
4- Describe a diagnostic approach in anemia

b) Iron deficiency anemia

1- List essentials of diagnosis of Iron deficiency anemia
2- Describe daily iron requirements of body
3- Explain effects of pregnancy and lactation on iron metabolism
4- List common symptoms of Iron deficiency anemia
5- Discuss laboratory findings in Iron deficiency anemia
6- Discuss differential diagnosis
7- Discuss medical oral and parenteral treatment of Iron deficiency anemia

c) Thalassemias

1- List essentials of diagnosis of Thalassemias
2- Describe different types of thalassemias
3- Discuss common symptoms of different types of thalassemias
4- Discuss differential diagnosis
5- Discuss treatment of thalassemias

d) Megaloblastic anemia

1. List essentials of diagnosis of Megaloblastic anemia
2. Describe etiology of Megaloblastic anemia
3. Discuss common symptoms and signs of Megaloblastic anemia
4. Discuss laboratory findings in Megaloblastic anemia
5. Discuss differential diagnosis of Megaloblastic anemia
6. Discuss treatment of Megaloblastic anemia

e) Anemia of chronic disease

1- List essentials of diagnosis of Anemia of chronic disease
2- Describe causes of Anemia of chronic disease
3- Discuss common symptoms and signs of Anemia of chronic disease
4- Discuss laboratory findings in Discuss laboratory findings in Megaloblastic anemia
5- Discuss treatment of Discuss laboratory findings in Megaloblastic anemia

f) Hemolytic anemias

1- Define hemolytic anemia
2- Classify hemolytic anemia
3- Describe common laboratory features of hemolytic anemia

a) Paroxysmal nocturnal hemoglobinuria

1- Define Paroxysmal nocturnal hemoglobinuria
2- List essentials of diagnosis of Paroxysmal nocturnal hemoglobinuria
3- Describe symptoms and signs of Paroxysmal nocturnal hemoglobinuria
4- Discuss treatment of Paroxysmal nocturnal hemoglobinuria

5- **Glucose-6-Phasphate dehydrogenase deficiency**

1- Define Glucose-6-Phasphate dehydrogenase deficiency
2- List essentials of diagnosis Glucose-6-Phasphate dehydrogenase deficiency
3- Describe symptoms and signs of Glucose-6-Phasphate dehydrogenase deficiency
4- Discuss laboratory findings in Glucose-6-Phasphate dehydrogenase deficiency
5- Discuss treatment of Glucose-6-Phasphate dehydrogenase deficiency

6- **Sickle cell anemia and related syndromes**

1- Define Sickle cell anemia
2- List essentials of diagnosis Sickle cell anemia
3- Describe symptoms and signs of Sickle cell anemia
4- Discuss laboratory findings in Glucose-6-Phasphate dehydrogenase deficiency
5- Discuss treatment of Glucose-6-Phasphate dehydrogenase deficiency

7- **Autoimmune hemolytic anemia**

1- Define Autoimmune hemolytic anemia
2- List types of auto-antibodies in Autoimmune hemolytic anemia
3- List essentials of diagnosis Autoimmune hemolytic anemia
4- Describe symptoms and signs of Autoimmune hemolytic anemia
5- Discuss laboratory findings in Autoimmune hemolytic anemia
6- Discuss treatment of Autoimmune hemolytic anemia

8- **Aplastic anemia**

1- Define Aplastic anemia
2- List essentials of diagnosis of Aplastic anemia
3- List causes of Aplastic anemia
4- List causes of pancytopenia
5- Describe symptoms and signs of Aplastic anemia
6- Discuss laboratory findings in Aplastic anemia
7- Discuss treatment of Aplastic anemia

Theme 2: Acute myeloproloferative& Lymphoproliferative disorder

1. Describe clinical presentation complication,investigations and management of ALL.
2. Describe clinical features investigations and management of AML.
3. Describe different phases of Therapy of ALL
4. List two favorable and two adverse cytogenetic abnormalities in AML
5. Identify the complications of chemotherapy for AML. List which complications contribute to mortality.
6. Describe distinctive clinical features with diagnostic differentiation between AML and ALL in terms of age, central nervous system involvement, treatment, and outcome of affected patient .
7. List the indications of bone marrow transplantation in different common Hematologic disorder

Theme 3: Chronic Myeloproliferative &Lymphoproliferative Disorder

1. Describe clinical presentation investigations and management of chronic myeloid leukaemia (CML).
2. Describe the clinical features and management of different phases of CML.
3. Describe the clinical presentation investigations and management of multiple myeloma.
4. Describe the presenting features, investigations and management of CLL.
5. Describe the clinical features investigations and management of Hodgkin lymphomas.

6. Describe the clinical features investigations and management of Non Hodgkin lymphomas
7. Describe sign and symptoms investigations and management of myelofibrosis.
8. Describe the typical physical exam, and blood and bone marrow findings in patients with chronic idiopathic myelofibrosis
9. Describe the clinical features investigations and management of amyloidosis.
10. Classify different type of myelodysplasia disorder
11. Describe three laboratory determinants of prognosis in patients with myelodysplasia
12. Describe the clinical features investigations and management of polycythemia Vera
13. Describe clinical features investigations and management of essential thrombocytosis
14. Describe clinical presentation investigations and management of multiple myeloma
15. Describe clinical features investigations and management of waldonstrom's macroglubinemia.
16. Describe complications that may occur in patients with multiple myeloma.
17. Describe the radio diagnostic modality in multiple myeloma.
18. Describe indications for therapy, treatment, and prognostic indicators for patients with multiple myeloma

Theme 4: Bleeding and coagulation

1. Describe clinical features investigations and management of idiopathic thrombocytopenic purpura
2. List drugs causing thrombocytopenia
3. Describe conditions causing thrombocytopenia
4. Discuss qualitative platelet disorders
5. Describe the clinical features and criteria for diagnosis of antiphospholipid antibody syndrome.
6. Describe five screening tests of hemostasis and list several causes of an abnormal result in each case.
7. Distinguish between signs and symptoms of primary hemostasis defects and plasma coagulation defects.
8. Describe clinical presentation investigations and management of von Willebrand disease
9. Describe clinical features investigations and management of hemophilia A (factor VIII deficiency), hemophilia B (factor IX deficiency)
10. Discuss anti-thrombotic therapy
11. Describe principle of blood donation storage and transfusion and its complications and management of such problems accordingly

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Schedule for Hematology Module – (5th Year)

Week 1

Time	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:00am-8:40am	LGIS Approach to patient with anemia Dr. Manzoor	LGIS Megalobatic anemia/anemia of chronic disease Dr. Javed Rathore	LGIS Hemolytic anemia Dr. Bashir Tarumbu	LIGS Acute lymphoblastic leukaemia & AML Dr. Naeem Ahmed	LGIS Polycythemia Dr. Ashfaque	CLINICAL ROTATIONS (8:00 AM to 2:00 PM)
8:45am-9:25am	LGIS Iron deficiency anemia Dr. Shafaq	LGIS Thalassemia Dr. Tahir Aziz	LGIS Approach to patient with pancytopenia and Aplastic anemia Dr. Imtiaz & Dr. Mahmood Malik	LGIS Chronic Myelogenous Leukemia Dr. Kursheed Lone	LGIS Chronic lymphocytic leukemia Dr. Kursheed Lone	
9:30am-2:00pm	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	
Break (2:00 – 5:00 PM)						
5:00-8:00 pm	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	

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Schedule for Hematology Module – (5th Year)

Week 2

Time	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:00am-8:40am	LGIS ITP Dr. Naheem	LGIS Multple myeloma Prof. Anwar,	LGIS Disseminated intravascular coagulation Dr. Mazhar Hamdani	LGIS Hodgkin Disease Dr. Bashir Trambu	Hazards of transfusion Dr. Malik Mahmood	CLINICAL ROTATIONS (8:00 AM to 2:00 PM)
8:45am-9:25am	CPC Approach to Bleeding disorder Dr. Ali Arshad,	LGIS Disorders of coagulation Dr. Tahir Aziz	LGIS Anti-Thrombotic therapy Dr. Malik Mahmood	LGIS Non Hodgkin Lymphomas Dr. Khurshid lone	LGIS Safety of blood transfusion Dr. Malik Mehmood	
9:00am-2:00pm	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	
Break (2:00 – 3:00 PM)						
3:00 to 4:00 PM	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	CLINICAL ROTATIONS	

RESOURCE FOR LEARNING

Reference Books

- Harrison's principle of medicines 19th edition 2015
- Davidson's principles & Practice of medicine 20th edition 2006
- KUMAR &CLARK CLINICAL MEDICINE SEVENTH EDITION 2009

- ESSENTIALS OF HEMATOLOGY SHIRISH M KAWTHALKAR FIRST EDITION CLINICAL MEDICINE, 6TH EDITION, PERVEEN & KUMAR, PAGES 425 – 429.

Web Links

Following online medical dictionaries can be referred
WWW.NBT.gov
www.nlm.nih.gov
www.medterms.com
www.bloodmed.com
www.online-medical-dictionary.org
www.medscape.com
www.jpathology.com
www.cdc.com

Inquires & trouble shooting

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