



# **Blood & Immunology-III**

## **Final Year MBBS**

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**Khyber Medical University (KMU) Vision:**

Khyber Medical University will be the global leader in health sciences academics and research for efficient and compassionate health care.

**Khyber Medical University (KMU) Mission:**

Khyber Medical University aims to promote professional competence through learning and innovation for providing comprehensive quality health care to the nation.

**Institute of Health Professions Education & Research (IHPER) Mission:**

To produce leaders, innovators and researchers in health professions education who can apply global knowledge to resolve local issues.

# Themes

Table 1: Thematic Distribution

S. No	Themes	Duration in Hours
1	Pallor	7
2	Fever	8
3	Bleeding	5

\*A minimum of 4 hours daily apart from above hours, must be allocated for clinical teaching and training at bed side in different units.

# Learning Objectives

**By the end of Blood & Immunology-III Module, Final year MBBS students will be able to:**

- 1) Explain the etiology, clinical features, diagnostic workup, and management of a patient with Anemia.
- 2) Explain the etiology, clinical features, diagnostic workup, and management of a patient with anemia of pregnancy.
- 3) Explain the etiology, clinical features, diagnostic workup, and management of a patient with Leukopenia.
- 4) Explain the etiology, clinical features, diagnostic workup, and management of a patient with Leukocytosis.
- 5) Explain the management and complications of a patient with hematological malignancies.
- 6) Discuss the diagnostic workup of a patient with splenomegaly.
- 7) Explain the etiology, clinical features, diagnostic workup, and management of a patient with bleeding and clotting disorders.
- 8) Explain the etiology, clinical features, diagnostic workup, and management of a patient with anemia of pregnancy.

# Specific Learning Objectives

Table 3: Theme Wise Learning objectives

Theme-1: Pallor					
Subject	Topic	Hours	S. No	Domain of learning	Learning objectives
Pediatrics	Anemia	1	1	Cognitive	Evaluate a neonate, infant and child with anemia (congenital/acquired).
			2	Cognitive	Explain the diagnostic workup needed for different age group in Pediatric patients with anemias of inadequate production and hemolytic anaemia.
			3	Cognitive	Classify anemias based on history, physical examination and relevant investigations considering different age groups
		1	4	Cognitive	Manage an infant and child with iron deficiency anemia and megaloblastic anemia
			5	Cognitive	Manage a neonate and infant with hereditary anemias
		2	6	Cognitive	Manage a child with hemolytic anemias: <ul style="list-style-type: none"> <li>• 7Thalassemia</li> <li>• Sickle cell anemia</li> <li>• Hereditary spherocytosis</li> <li>• G6PD deficiency</li> </ul>

			7	Cognitive	Manage a child with anemia resulting from bone marrow failure (Aplastic anemia)
			8	Psychomotor skills	Perform physical examination of a neonate, infant and child with anemia
			9	Psychomotor skills	Perform general physical and systemic examination keeping in mind the hematological problem for a specific Pediatric age group
			10	Affective domain	Counsel a parent of a neonate, infant and child with Thalassemia major
<b>Medicine</b>	Anemias	1	11	Cognitive	Evaluate a patient with anemia
			12	Cognitive	Explain the diagnostic workup of a patient with anemias
			13	Cognitive	Classify anemias based on history, physical examination and relevant investigations
		1	14	Cognitive	Manage a patient with iron deficiency anemia
			15	Cognitive	Manage a patient with hereditary anemias
			16	Cognitive	Manage a patient with hemolytic anemias (hereditary and acquired)
			17	Cognitive	Manage a patient with anemia resulting from bone marrow failure
			18	Psychomotor skills	Take a history from a patient with anemias
			19	Psychomotor skills	Perform physical examination of a patient with anemia

			20	Psychomotor skills	Perform hematological examination
			21	Affective domain	Counsel a patient with different type of anemias
<b>Gynaecology</b>	Anemia in pregnancy	1	22	Cognitive	List the various causes of anemia in pregnancy.
			23	Cognitive	Describe Feto-maternal complications of anemia in pregnancy.
			24	Cognitive	Interpret the blood picture of a pregnant patient with anemia
			25	Cognitive	Outline diagnostic workup and management plan of a patient with anemia in pregnancy.
			26	Psychomotor	Take history and perform physical examination of a patient with anemia in pregnancy.
			27	Affective	Counsel a pregnant patient with anemia.
<b>Theme-2: Fever</b>					
<b>Subject</b>	<b>Topic</b>	<b>Hours</b>	<b>S. No</b>	<b>Domain of learning</b>	<b>Learning objectives</b>
<b>Pediatrics</b>	Leukopenia	1	28	Cognitive	Evaluate a report of peripheral blood film
			29	Cognitive	Explain the diagnostic approach to a child with Leukopenia
			30	Psychomotor	Take a history of a child/infant with leukopenia / aplastic anemia
	Leukemias	1	31	Cognitive	Explain the diagnostic approach to a child with leukocytosis
			32	Cognitive	Classify Leukemias



			33	Cognitive	Explain the diagnostic approach to a patient with suspected leukemia
			34	Cognitive	Explain the management of a child with acute Leukemias
			35	Psychomotor	Take history and perform physical examination of a patient with leukocytosis
			36	Affective	Counsel a parent with a child with ALL.
	Splenomegaly	1	37	Cognitive	Classify the causes of splenomegaly in Paediatric age group
			38	Cognitive	Explain the diagnostic approach to a child with splenomegaly
<b>Medicine</b>	Leukopenia	1	39	Cognitive	Evaluate a peripheral blood film
			40	Cognitive	Explain the diagnostic approach to a patient with Leukopenia
			41	Psychomotor	Take a history from a patient with leukopenia and aplastic anemia
	Leukemias	2	42	Cognitive	Explain the diagnostic approach to a patient with leukocytosis
			43	Cognitive	Classify Leukemias
			44	Cognitive	Explain the management of a patient with acute Leukemias
45			Cognitive	Explain the management of a patient with chronic Leukemias	

			46	Psychomotor	Take history and perform physical examination of a patient with leukocytosis
	Splénomegaly	2	47	Cognitive	Classify the causes of splénomegaly
			48	Cognitive	Explain the diagnostic approach to a patient with splénomegaly
	Lymphadenopathy		49	Cognitive	Classify the causes of generalized lymphadenopathy
			50	Cognitive	Explain the diagnostic approach to a patient with generalized lymphadenopathy
			51	Cognitive	Classify lymphomas
			52	Cognitive	Explain the management of a patient with Lymphoma (Hodgkin`s and non-Hodgkin`s)
			53	Cognitive	Explain tumor lysis syndrome and its management
			54	Cognitive	Explain the common adverse effects of chemotherapeutic agents used in hematological malignancies and their management and prevention.
			55	Affective	Counsel a patient with newly diagnosed hematological malignancy
<b>Theme-3: Bleeding</b>					
<b>Subject</b>	<b>Topic</b>	<b>Hours</b>	<b>S. No</b>	<b>Domain of learning</b>	<b>Learning objectives</b>
Pediatrics	Definition of terms	1	56	Cognitive	Define Petechae, purpura, ecchymosis

	Bleeding and clotting disorders		57	Cognitive	Explain the diagnostic approach to a child/infant with bleeding disorder
			58	Cognitive	Classify clotting disorders and explain their etiologies
			59	Cognitive	Explain the coagulation screen
			60	Cognitive	Interpret the common hematological parameters in a child with bleeding disorder (Platelets count, BT, CT, PT, APTT, Fibrinogen levels, FDPs)
		2	61	Cognitive	Explain the management of Von Willebrand disease
			62	Cognitive	Explain the management of a child with Hemophilia A
			63	Cognitive	Explain the management of a child with Idiopathic Thrombocytopenic Purpura
			64	Cognitive	Explain the dosage and administration of factor VIII in a child/infant in different situations like accidents, fall of deciduous teeth, surgery etc.
	65	Psychomotor	Take history and perform physical examination of a child with history of bleeding disorder		
<b>Medicine</b>	Bleeding and clotting disorders	2	66	Cognitive	Explain the diagnostic approach to a patient with bleeding disorder
			67	Cognitive	Classify hypercoagulable states and their management and prevention of thrombosis