

Jinnah Sindh Medical University
Orthopedics Module Study Guide- MBBS Year-4, 2022

MODULE TITLE	ORTHOPEDICS
INTRODUCTION	Orthopedics module is designed to present state of the art knowledge and experience from clinical experts and researchers specializing in the area of trauma and orthopedic surgery. It will also review the clinical aspects of musculoskeletal and connective tissue diseases. The module builds upon the basic sciences knowledge gained during the Locomotor-1 & 2 modules in years 2 & 3 respectively.
RATIONALE	Musculoskeletal diseases and injuries include conditions that affect joints, bones, muscles, the spine, and multiple body areas or systems such as connective tissues and blood vessels. An analysis of Global Burden of Disease (GBD) data in 2019 showed that globally approximately 1.71 billion people have musculoskeletal problems. It is therefore essential to empower the students with core foundational knowledge related to diagnosis, treatment, and prevention of musculoskeletal diseases and injuries.
TARGET STUDENTS	Fourth year MBBS, 2022
DURATION	2 weeks
MODULE OUTCOMES	At the end of the module, the students will be able to: • Diagnose common Orthopedic conditions by correlating clinical information with underlying pathophysiology • Justify treatment plans based on principles of management of orthopedics
DEPARTMENTS/ SUBJECTS	1. Internal Medicine 2. Orthopedics 3. Radiology 4. Surgery
OBJECTIVES	By the end of the module, the students should be able to:
<u>MEDICINE LECTURES</u> 1. Gout • Classify gout • Describe the pathogenesis, morphological and clinical features of gout • Differentiate among various types of gout, based on clinical presentations	

- Develop a plan for treating acute gouty arthritis

2. Parathyroid disorders

- Diagnose hyper-and hypo-parathyroid disorders based on clinical manifestations and investigation findings
- Develop treatment plans for hyper and hypo-parathyroid disorders

3. Osteoporosis and Osteomalacia

- Describe the prevalence and pathogenesis of osteoporosis and Osteomalacia
- Diagnose osteoporosis and osteomalacia based on clinical features, laboratory tests and imaging results
- Develop a treatment plan for osteoporosis and osteomalacia

4. Osteoarthritis

- Describe the prevalence, pathogenesis, morphological and clinical features of osteoarthritis
- Diagnose osteoarthritis based on clinical features, laboratory tests and imaging results
- Develop a treatment plan for osteoarthritis

5. Musculoskeletal diseases

- Describe the clinical features, laboratory tests, and imaging of the following musculoskeletal diseases:
 - i. Rheumatoid Arthritis
 - ii. Seronegative Spondylo-arthropathies

6. Vasculitis

- Classify vasculitis
- Describe the pathophysiology of vasculitis
- Discuss the clinical manifestations and treatment of vasculitis

7. Systemic connective tissue diseases

(Systemic Lupus Erythematosus, Systemic sclerosis, Polymyositis and Dermatomyositis, and Myotonic and Duchenne muscular dystrophy)

- Briefly describe the pathophysiology, prevalence, clinical features, laboratory tests, and current management strategies of
 - i. Systemic Lupus Erythematosus
 - ii. Systemic sclerosis
 - iii. Polymyositis and Dermatomyositis
 - iv. Myotonic dystrophy and Duchenne muscular dystrophy

ORTHOPEDICS LECTURES

1. Presenting problems and investigations of Musculoskeletal diseases

- Describe the presenting problems and investigations of Musculoskeletal diseases

2. Fractures

- Classify the different types of fractures
- Describe the specific types of fractures (hip, Colles', and pelvic fractures)
- Discuss the general principles of management of fractures

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- Describe the therapeutic measures for different fractures, the principles of fracture treatment in children and common complications of fractures
- Discuss the principles of fracture fixation

3. Osteomyelitis and Septic arthritis

- Name the major pathogenic organisms causing bone and joint infections
- Describe the pathophysiology, clinical features, elements of prevention, and management of bone and joint infections
- Outline the main clinical features and laboratory tests to diagnose bone and joint infections (Septic, Viral, Tuberculous arthritis)

4. Trauma I (Protocols of management of Trauma patient)

- Describe the sequence of evaluation of a trauma patient
- Describe the criteria for triage of a trauma patient

5. Trauma II (Spinal)

- Describe the rapid assessment of a patient with spinal trauma
- Describe the etiology, pathophysiology, and the appropriate management of patients with spinal cord injury

6. Back pain

- Identify the most common conditions causing back pain
- Develop a plan for diagnosis and management of non-traumatic neck and back problems

7. Bone tumors

- Correlate the pathological findings of common bone tumors with their clinical presentation
- Justify the diagnosis, investigations and treatment plans for primary bone tumors

RADIOLOGY LECTURES

1. Imaging of musculo-skeletal system

- Explain the role of radiologic imaging in musculo-skeletal system diseases
- Describe the principles of MRI, isotope bone scans, DEXA scans and CT scans

2. Imaging of bone tumors

- List the techniques involved in diagnosis of bone tumors
- Identify common skeletal injuries on radiographic films (e.g. fractures and dislocations)

SURGERY LECTURES

1. Torso Trauma

- Develop a plan for diagnosis and treatment of patients with torso trauma
- Describe the classification of pelvic fractures and the associated complications

2. Maxillo-facial injuries

- Describe the mechanism, assessment, and management of maxillo-facial injuries

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SKILLS TO BE LEARNT IN WARDS

Procedures (Observe/ Assist): Intra-articular injections

INTERNAL ASSESSMENT	Internal assessment will take place as per institutional policy
ANNUAL EXAMINATION	MCQs and OSCE (observed + unobserved)
COURSE EVALUATION	Course evaluation will be obtained through a feedback form which will be posted on the JSMU website

