# Summary

**Subject: Medical Surgical Nursing I**

**Topic: Osteomyelitis (10.00 am to 11.00am)2nd year**

**INTRODUCTION**

Osteomyelitis sometimes abbreviated as OM is derived from Greek word osteon meaning bone myelo means marrow & its means inflammation; therefore it is infection and inflammation of bone or bone marrow. In children long bones are most commonly affected & in adults vertebrae & pelvis.

**DEFINITION**

“Osteomyelitis is an infection of bone that results in inflammation, necrosis & formation of new bone.”

**ETIOLOGY**

* Staphylococcus aureus in 80 % of the cases
* Gram positive organisms includes Streptococci & enterococci.
* Gram negative organisms including Pseudomonas species.

**RISK FACTORS**

* Poorly nourished people
* Elderly
* Obese
* Impaired immune system.
* Chronic illnesses e.g. Tuberculosis, osteoporosis
* Long term use of corticosteroids
* Immunosuppressive agents

**CLASSIFICATION**

* Osteomyelitis can be classified as:
* Suppurative osteomyelitis
* Acute
* Chronic
* Acute
* Hematogenous osteomyelitis.
* Contiguous focus osteomyelitis
* Osteomyelitis with vascular insufficiency.
* Chronic
* Diffuse sclerosing (Condensing osteitis)
* Proliferative periostitis (Garre’s scleorising OM)
* Osteoradio necrosis.
* Non- suppurative
* Primary
* Secondary

**PATHOPHYSIOLOGY**

* Due to any etiological factors
* Initial response to infection i.e. inc. vascularity & edema
* After 2-3 days thrombosis of local blood vessels occur
* Ischemia with bone necrosis
* Infection extend to medullary cavity & to adjacent tissues
* Formation of bone abscess
* Abscess cavity contains sequestrum
* Formation of involucrum surrounding the sequestrum
* Chronically infected sequestrum remains and cause recurrent infections throughout life

**CLINICAL MANIFESTATIONS**

* Chills
* High fever
* Rapid pulse
* General malaise
* The infected area becomes painful, swollen & extremely tender.
* Constant & pulsating pain that intensifies with movement as a result of pressure of the collecting purulent material.

**DIAGNOSTIC FINDINGS**

* X-ray demonstrates soft tissue edema.
* Radioactive bone scans.
* MRI
* Blood studies reveals leukocytosis & an elevated ESR.
* Wound & blood culture

**MEDICAL MANAGEMENT**

* Initial treatment is to control & halt the infective process.
* General supportive measures e.g. hydration, diet high in vitamin & proteins.
* Correction of anemia should be instituted.
* The area affected with osteomyelitis is immobilized to decrease discomfort & to prevent pathologic fracture of the weakened bone.
* IV antibiotics continues for 3-6 weeks

**For MRSA confirmed cases**

First choice initial therapy is vancomycin IV 30 mg/day/kg divided in to 3 or 4 doses + Rifampicin 600mg as a single daily dose 0r 300 mg BD.

In patients who can’t receive Rifampicin 2nd drug therapy is Clindamycin 600 mg IV quarterly.

If Ist & 2nd regimen both are not possible Linezolid 600 mg PO BD can be given or else vancomycin monotherapy is considered

Failure of 6 weeks of IV therapy alone is very common in as high as 46% of the cases.

Follow on consolidation therapy should be continued for approximately 2-3 months assuming adequate Clinical response.

First choice is levofloxacin 5oo mg PO BD + Rifampicin 300 mg PO BD.

Second choice is clindamycin 300 mg PO BD + Rifampicin 300 mg PO BD.S

Third choice is TMP/SMX 2DS tablets PO BD + Rifampicin 300 mg BD

Fourth choice is doxycyclline 100 mg PO BD + Rifampicin 300 mg PO BD

**SURGICAL MANAGEMENT**

* Surgical debriment
* Sequestrectomy
* Wound irrigation
* Internal fixation or external supportive devices may be needed to stabilize or support the bone to prevent pathological fracture.

**COMPLICATIONS**

* Bone abscess (Pocket of pus)
* Bone necrosis (Bone death)
* Spread of infection
* Inflammation of soft tissues (Cellulitis)
* Blood poisoning (Septicemia)
* Chronic infection that does not respond to any treatment.

**Submitted by:**

Komal Rana

Clinical Instructor

ACN,Baru Sahib