

Student Name: Rachel Mordas

Medical Diagnosis/Disease: Osteoarthritis

NCLEX IV (8): Physiological Integrity/Physiological Adaptation

Anatomy and Physiology

Normal Structures

- The hip is a ball-and-socket synovial joint formed by the head of the femur and acetabulum of the pelvis.
- Articular cartilage lines the joint surfaces, providing smooth movement & shock absorption.
- The joint capsule contains synovial fluid that lubricates & nourishes cartilage.
- Surrounding muscles, ligaments, and tendons provide stability & mobility.
- Hip allows flexion, extension, abduction, adduction, rotation, and circumduction. The joint capsule closes the joint, maintaining integrity and containing synovial fluid.

Pathophysiology of Disease

- Osteoarthritis is a degenerative joint disease characterized by the gradual loss of articular cartilage and formation of osteophytes (bone spurs)
- With cartilage deterioration, bone rubs against bone, causing pain, inflammation & decreased joint mobility.
- The body attempts to repair damage, but cartilage can not regenerate, leading to joint space narrowing & deformity.
- Chronic inflammation & stress on the joint result in joint instability, stiffness, and functional decline. THA replaces damaged joint with prosthetic implant that restores mobility & relieves pain.

NCLEX IV (7): Reduction of Risk

Anticipated Diagnostics

- Labs Radiologic: X-ray, MRI, CT scan displaying joint space narrowing, osteophytes, & bone sclerosis.
- Synovial Fluid analysis:  
usually noninflammatory, clear/yellow with low WBC count
- Additional Diagnostics  
Labs: ESR & CRP  
CBC
- PT - evaluation

NCLEX II (3): Health Promotion and Maintenance

NCLEX IV (7): Reduction of Risk

Contributing Risk Factors

- Age > 50 years
- sex: female
- Obesity
- Joint injury or overuse
- genetic predisposition (Joint deformities)

Signs and Symptoms

- Joint pain (worsens with activity)
- Joint stiffness (in morning or after inactivity)
- Swelling, tenderness, and muscle weakness
- difficulty with ADLs
- one hip already affected

Possible Therapeutic Procedures

- Non-surgical - hot/cold therapy
- PT & OT therapy
  - assistive devices
  - weight management
- Surgical
- Total hip arthroplasty (THA)
  - replacement of femoral head and acetabular socket with prosthetic components

Prevention of Complications

- (What are some potential complications associated with this disease process?)
- post-op complications
  - maintain abduction of hip using pillows
  - avoid flexion > 90°
  - avoid crossing legs, twisting hip or feet.
  - Early (safe) ambulation

NCLEX IV (6): Pharmacological and Parenteral Therapies

NCLEX IV (5): Basic Care and Comfort

NCLEX III (4): Psychosocial/Holistic Care Needs

Anticipated Medication Management

- NSAIDS
- Acetaminophen
- opioids
- corticosteroid injections
- Anticoagulants
- Antibiotics & stool softeners

Non-Pharmacologic Care Measures

- heat/cold therapy for stiffness
- encourage rest & gentle movement
- encourage independence with assistive devices for ADLs
- promote weightloss or maintain & encourage healthy lifestyle choices

What stressors might a patient with this diagnosis be experiencing?

- decreased mobility
- loss of independence
- Surgical fears
- changes in body image
- financial stress
- social isolation / depression

Client/Family Education

NCLEX I (1): Safe and Effective Care Environment

### List 3 potential teaching topics/areas

- Correct use of assistive devices when necessary.
- Maintain healthy weight, lifestyle habits, and joint exercise.
- Avoid high-impact activities to help preserve joint function.

### Multidisciplinary Team Involvement

(Which other disciplines do you expect to share in the care of this patient)

- Orthopedic surgeon
- Nurse
- Physical therapist (PT)
- Occupation therapist (OT)
- Case manager / Social Worker
- PCP
- dietician
- pharmacist

Nursing Problem Worksheet

Name: Rachael Mordes

Anticipated Patient Problem and Goals	Relevant Assessments (Prewrite) What assessments pertain to your patient's problem? Include frequencies	Multidisciplinary Team Intervention (Prewrite) What will you do if your assessment is abnormal?
Problem: <u>Impaired Mobility</u>  Reasoning: Degeneration of articular cartilage & post-op limit joint ROM and physical activity.  Goal: pt will verbalize & demonstrate hip precautions to prevent dislocation. Goal: Pt will ambulate within 48hrs post-op with assistive device	Assess ROM and muscle strength each shift. *	collab with PT/OT & implement safe exercises to increase mobility.
	Assess gait stability & proper use of assistive devices throughout shift. *	Obtain proper assistive devices & proper use when necessary.
	Assess for signs of dislocation each shift or PRN	Notify surgeon if signs of dislocation are present
	Assess Morse-Fall Scale Score each shift. *	Implement fall-risk precautions as necessary to avoid further injury.
	Assess level of pain 0-10 Scale q2-4hr that may lead to interference with mobility. *	Provide pain medications as ordered & encourage rest.

→ prior to & post surgery

Anticipated Patient Problem and Goals	Relevant Assessments (Prewrite) What assessments pertain to your patient's problem? Include frequencies	Multidisciplinary Team Intervention (Prewrite) What will you do if your assessment is abnormal?
Problem: <u>Pain</u>  Inflammation from osteoarthritis/and Reasoning: or THA Surgery can both cause immense pain or discomf +. Goal: pt will report pain ≤ 4/10 after analgesic administration. Goal: pt will verbalize a decrease in pain by end of shift.	Assess (BP, HR, RR) <del>for</del> <sup>q4</sup> *	encourage deep breathing and other relaxation therapies
	monitor effectiveness of pain medications 30-60min after administration. *	Notify provider if pain is un-relieved by ordered medications
	Evaluate positioning and comfort measures q2 *	reposition safely & provide a comfortable environment for the pt.
	Assess for non-verbal cues (grimacing, restlessness) during each encounter. *	Ask for a verbal pain scale & implement as needed (therapy/painmeds)
	Assess pain intensity, location, and description q2hr & <del>report to provider</del>	Administer analgesics as ordered & consult with provider if needed.

(1hr)

ACTIVE LEARNING TEMPLATE: **Medication**

Morphine Availability:  
Immediate-release tab: 15mg, 30mg  
Extended release tab: 15mg, 30mg, 60mg, 100mg, 200mg  
Extended release capsule: 10mg, 20mg, 30mg, 45mg, 50mg, 60mg, 75mg, 80mg, 90mg, 100mg, or 120mg  
Oral Solution: 1mg/mL, 10mg/5mL, 20mg/5mL, 5mg/mL, 100mg/5mL  
Rectal: 5mg, 10mg, 20mg, 30mg  
IV/IM: 1mg/mL, 2mg/mL, 4mg/mL, 5mg/mL, 8mg/mL, 10mg/mL, 25mg/mL, 50mg/mL

STUDENT NAME Rachel Mordes  
 MEDICATION Morphine Sulfate  
 CATEGORY CLASS Opioid  
 PURPOSE OF MEDICATION \_\_\_\_\_

**Expected Pharmacological Action**  
 Binds to opiate receptors in the CNS. Alters the perception of and response to stimuli while producing generalized CNS depression.

**Therapeutic Use** To relieve pain severe enough to require opioid treatment and for which alternative treatment options such as nonopioid analgesics or opioid combination products are inadequate or not tolerated.

**Complications** CNS: coma, increased intracranial pressure, seizures, CV: bradycardia, cardiac arrest, hypotension, shock. EENT: laryngeal edema/laryngospasm, ENDO: adrenal insufficiency. GI: intestinal obstruction, toxic megacolon  
HEME: leukopenia, thrombocytopenia. RESP: apnea, asthma, bronchospasm, hypoventilation, pulmonary edema, resp arrest, & depression. MISC: allergic reaction, angioedema, constipation

or 24hr opioid ordered dose  
**Medication Administration**  
PO, rect (adults ≥ 50kg):  
 Starting dose 30mg 3-4hr or once 24hr opioid requirement determined. Capsules should not exceed 1600mg/day.  
Rect = 0.3mg/kg every 3-4 (initially)  
IM, IV, subcut (adults ≥ 50kg):  
 0.05-0.2mg/kg q 3-4hr; max 15mg/dose  
IV: (adults) - continuous infusion 0.8-10mg/hr may be preceded by a bolus of 15mg. Up to 80mg/hr - MAX

**Contraindications/Precautions** Contraindicated: hypersensitivity, alcohol use, significant respiratory depression, acute or severe bronchial asthma, paralytic ileus. Precautions: personal or F/hx of substance abuse or mental illness, renal/hepatic impairment, pulmonary disease, hypothyroidism, seizures, adrenal insufficiency, undiagnosed abdominal pain, prostatic hyperplasia, pts under-going procedures that ↓ pain, long-acting agents should be discontinued 24hr before & replaced with short-acting agents.

**Nursing Interventions**  
 - Monitor assess pain before/after admin  
 - Assess bowel function routinely (I/O)  
 - Assess for hyperalasia  
 - Assess lab test results (if toxicity & OD)  
 - Discontinue morphine gradually  
 - PO may be admin with/food & drinks  
 - Assess vital signs frequently  
 - Assess respiratory function of pts alert & orientness

**Interactions** extreme caution: in pts receiving MAO inhibitors within 14 days prior - may result in severe reactions. Interactions: drugs that affect serotonergic neurotransmitter systems; tricyclic antidepressants, mirtazapine, linezolid, methylene blue, triptans. = ↑ risk of serotonin syndrome. Mixed agonist/antagonist analgesics = ↓ morphine effects. May ↑ anticoagulant effect of warfarin. Cimetidine = ↑ level/risk of toxicity. IV morphine = may ↓ levels of clopidogrel, prasugrel, ticagrelor  
 Kava-Kava, Valerian, chamomile = can ↑ risk of CNS depression.

**Client Education**  
 - Explain purpose & side effects & advise to take as directed.  
 - Teach about adverse/interactions & effects & have client notify the healthcare provider if experiencing.  
 - Advise pt that morphine has abuse potential.  
 - Educate pt & caregivers how to recognize respiratory depression & calling 911 or getting emergency medical help start.  
 - Advise pt to call for assist with ambulation & get up slowly.  
 - Caution to avoid use of alcohol or antidepressants while taking this drug.

**Evaluation of Medication Effectiveness**  
 Decrease in severity of pain without a significant alteration in level of consciousness or respiratory status.  
 Decrease in symptoms of pulmonary edema.

ACTIVE LEARNING TEMPLATE: **Medication**

STUDENT NAME Rachel Mordas

MEDICATION Oxycodone

REVIEW MODULE CHAPTER \_\_\_\_\_

CATEGORY CLASS opioid

PURPOSE OF MEDICATION

Expected Pharmacological Action  
Binds to opiate receptors in the CNS.  
Alters the perception of and response to painful stimuli, while producing generalized CNS depression → decreased pain.

Therapeutic Use decrease pain.  
PO: chronic pain  
rectal: pain PRN

Complications CV: orthostatic hypotension Derm: sweating  
Endo: adrenal insufficiency GI: constipation, nausea, vomiting.  
GU: urinary retention Neuro: confusion, sedation, dizziness, headache Resp: resp depression, including sleep apnea/ sleep-related hypoxemia.

Medication Administration  
PO (Adults ≥ 50kg): 5-10mg every 3-4hr PRN.  
PO (Adults ≤ 50kg): 0.2mg/kg every 3-4hr PRN.

Rect (Adults): 10-40mg 3-4 times a day initially PRN.  
Hepatic impairment - initial dose by 50-66%

Contraindications/Precautions Hypersensitivity: resp depression, paralytic ileus, severe/acute bronchial asthma, acute/mild/intermittent, or post op pain. Precautions: history of substance abuse/mental issues, head trauma, renal impairment, hepatic impairment, lymphatic/hormone issues, GI issues,

Nursing Interventions  
- Assess pain prior to 1hr peak after administration.  
- Assess older adults more frequent  
- Assess bowel function routinely.  
- Lab test considerations: may increase amylase & lipase  
- Watch for toxicity & overdose.

Interactions Use with caution in patients receiving MAO inhibitors; may result in unpredictable reactions ↓ initial dose of oxycodone to 25% of usual dose. Mixed agonist/antagonist analgesics & partial agonist analgesics may ↓ oxycodone effects. CYP3A4 inducers may ↓ levels and analgesia. CYP2D6 inhibitors may ↑ risk of toxicity

Client Education  
- explain purpose advice about abuse teach respiratory depression detection may cause dizziness change positions slowly constipation prevention - no alcohol use

Evaluation of Medication Effectiveness  
Decrease in severity of pain without significant alteration in level of consciousness or respiratory status.