

8. GERIATRIC MANAGEMENT

B. Geriatric Trauma Hip Fracture Management

OBJECTIVE: Geriatric patients continue to become an increasing proportion of trauma patients as the population ages. Geriatric hip fractures are commonly low impact energy trauma in setting of osteoporosis, frailty, or history of falls. This and other accompanying guidelines highlight specific considerations and challenges in this population.

Purpose: This is a collaborative effort between Hospital Medicine/Geriatrics, Trauma surgery, and Orthopedic surgery to streamline pre-operative risk stratification and medical optimization for OR in all patients being admitted to WMC for isolated hip fractures, and to use evidence-based guidelines for perioperative management.

Goals:

- Decrease admission to OR time; goal < 24 hours in isolated geriatric hip fractures
- Improve patient safety, decrease length of stay, and prevent post-operative complications

Rationale: AAOS guidelines recommend surgery within 48 hours for hip fractures; multiple studies have shown benefits with reduction in mortality and post-operative complications if hip fracture surgery done < 24 hours versus > 24 hours.

Admission Guidelines

Patients with isolated hip fractures can be admitted to a non-surgical service without a Trauma Service consultation. Patients ≥ 55 years of age with medical comorbidities and all patients ≥ 65 years of age will be admitted to the medicine service with orthopedic consultation. Younger and non-medically complex patients will be admitted to the orthopedic surgery service.

Emergency Department

ED providers to:

- Stabilize patient
- Labs
- Imaging
- EKG
- Consults: Ortho/ Medicine as per above admission guidelines
- The need for perioperative reversal of anticoagulants should be made at the discretion of the Orthopedic Surgery Attending ([WMC Trauma Anticoagulation Reversal Guideline](#))

Preoperative Medical Evaluation

- Acute hip fracture surgery is considered an “urgent” surgical procedure (not emergent or elective for the purpose of this protocol) therefore should be performed within 6-24 hours
- Urgent procedures: only identify patients with unstable cardiac, pulmonary, or medical conditions that have an impact perioperatively
- Avoid diagnostic studies preoperatively that have not shown to benefit patients in the perioperative period and delay urgent surgery

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Cardiac Risk Stratification and Assessment

- **Delay OR for the following cardiac conditions only + obtain 2D Echocardiogram (TTE) and consult cardiology:**
 - Active Acute Coronary Syndrome (ACS)
 - Unstable arrhythmia (Hypotension +/- Afib with RVR, SVT, sustained Vtach etc.)
 - Decompensated acute heart failure exacerbation (new or acute on chronic) with new oxygen requirement
 - Known moderate to severe aortic or mitral stenosis without an echocardiogram within the last 12 months or new murmur on examination

Pulmonary Risk Stratification and Assessment

- Preoperative testing:
 - CXR, PFT, ABG: not indicated prior to urgent hip fracture repair.
 - Routine pre-op CXR in asymptomatic patients is not indicated; if signs and symptoms of new or unstable cardiopulmonary disease (pneumonia, pulmonary edema, pulmonary embolism, COPD exacerbation) on physical exam, then can do imaging regardless of the procedure.
 - Reactive Airway Disease: Asthma/COPD –
 - Medications: continue inhaled beta-agonists, anticholinergics, leukotriene inhibitors. Theophylline: check levels; consider holding due to risk of arrhythmia.
 - If acute exacerbation occurs, consider delaying surgery and treating with steroids.
 - Postoperative pulmonary complications (PPC) risk indices may be utilized to indicate which patients are at risk. Screening for PPC is not mandatory and should not delay surgery.
 - ARISCAT index
 - Gupta (only pneumonia or respiratory failure)
- ➔ For patients at increased risk:
- Recommend minimizing opioids and sedatives, initiating early and frequent mobilization and non-supine positioning while in bed, and encouraging postoperative lung expansion with incentive spirometry, deep breathing techniques, and CPAP.

Hematologic Assessment

- Anemia: adhere to a restrictive strategy for PRBC transfusion for hemoglobin < 7 g/dL

Endocrine: Diabetes

- In patient with uncontrolled hyperglycemia, evaluate for DKA/HHS and cancel/delay surgery if has DKA or has symptoms of DKA/severe dehydration.
- No HbA1c threshold should cancel or delay surgery.

Patients with Advanced Dementia

- Advanced dementia + hip fracture = poorer outcomes
- Ensure realistic expectations are set with family/proxies and involving palliative care team for goals of care discussions

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Frailty

- Associated with increased mortality and postoperative complications
- Use of the Trauma Specific Frailty Index may help guide family discussions regarding treatment options and goals of care.

Considerations for Geriatric Medical Care

- Anticoagulation Management
- [WMCHHealth Anticoagulation Reversal Guideline](#)
- [Venous Thromboembolism Prophylaxis](#): for patients with traumatic injuries
- Consult Physical Therapy/Occupational Therapy
- Consult Social Worker and Case Management
- Delirium Prevention and Management:
 - Assess and address underlying triggers.
 - Medication reconciliation, address polypharmacy, Beers criteria
 - Replete electrolytes
 - Treat underlying infection (UTI, pneumonia, cellulitis, bed sores)
 - Urinary retention and constipation
 - Optimize pain control
 - Discontinue any offending medications.
 - Orient daily (date, day, and time)
 - Promote good sleep/wake cycles.
 - Avoid unnecessary nighttime disruptions unless medically needed.
 - Avoid benzodiazepines or other sedatives unless necessary.
 - Liberalize family/friends visits
 - Avoid tethering: restraints, catheters, cardiac monitor, IV lines, nasal cannula
 - Use of Antipsychotics:
 - First line: Seroquel, risperidone, olanzapine
 - Second line: Haldol, lorazepam
 - Monitor for black box warnings for above antipsychotics
- Medication Management:
 - Review home medication list and restart as appropriate
 - Review Beers Criteria list of medications
 - Ensure home medications are restarted to prevent withdrawal while discontinuing medications that may increase the risk of falling or delirium.
 - Address polypharmacy prior to discharge
- Optimize pain control
- Pressure Ulcer Prophylaxis:
 - Frequent patient repositioning, special mattresses, off-loading; refer to Pressure Injury Incision Wound tab on Cerner.
- Nutrition:
 - Consult nutrition to optimize intake (meals + supplements), consider speech/swallow evaluation to evaluate diet and need for dentures.
- Constipation:
 - Order bowel regimen for patients with or at risk for constipation.

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- Miscellaneous:
 - Use vision aids and hearing aids if used at baseline – consider audiology consult if hard of hearing; consult PT/OT; liberalize visitors, especially family members; avoid urinary retention; discontinue Foley; and encourage self-voiding.

Discharge Guidelines

Osteoporosis Management

- Start calcium carbonate 1250 mg daily on discharge.
- Check Vitamin D levels and treat if deficient.
- Measure serum 25 (OH) D concentration.
 - $< 12 \text{ ng/mL}$ (30 nmol/L):
 - Start oral vitamin D3 50,000 IU once a week for 8 weeks, then 800 IU daily.
 - $\geq 12 \text{ to } < 20 \text{ ng/mL}$ (30 to 50 nmol/L):
 - Start oral vitamin D3 800-1000 IU daily.
 - $\geq 20 \text{ to } 30 \text{ ng/mL}$ (50 to 75 nmol/L):
 - Start oral vitamin D3 600- 800 IU daily.
 - If $\geq 30 \text{ ng/mL}$ (75 nmol/L):
 - No supplementation needed, continue with recommended dietary allowance.

Outpatient Follow up:

- PCP: follow up with their own PCP if does not have use the “Post DC Follow up appointments” role on Tiger Text to facilitate outpatient scheduling.
- Orthopedic surgery.
- Endocrine/Osteoporosis Clinic if patient has osteoporosis.

Post op Instructions:

- Weight bearing status and wound care/dressing changes will be at the discretion of the Orthopedic Surgeon.
- The Hospitalist will coordinate discharge disposition, DME, and home health aides.

References

1. AAOS Management of Hip Fractures in Older Adults Evidence Based Clinical Practice Guideline 2021
2. SHM: Management of Patients with Hip Fractures
3. UCSF Hip Fracture Protocol
4. America Geriatrics Society: Geriatrics Review Syllabus
5. UNM Hip Fracture Protocol
6. 2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery: Fleisher LA, Fleischmann KE, Auerbach AD, Barnason SA, Beckman JA, Bozkurt B, Davila-Roman VG, Gerhard-Herman MD, Holly TA,

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Kane GC, Marine JE, Nelson MT, Spencer CC, Thompson A, Ting HH, Uretsky BF, Wijeyesundera DN, 2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery: Executive Summary, Journal of the American College of Cardiology (2014), doi: 10.1016/ j.jacc.2014.07.945.

7. Feely MA, Collins CS, Daniels PR, Kebede EB, Jatoi A, Mauck KF. Preoperative testing before noncardiac surgery: guidelines and recommendations. Am Fam Physician. 2013 Mar 15;87(6):414-8. PMID: 23547574.

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