University College London Hospitals
NHS Foundation Trust

Inpatient Zolendronic Acid Following Hip Fracture: A Quality Improvement Project

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Background

- 70,000 hip fractures/year in the UK → NHS cost >£2 billion
- Significant morbidity + up to 30% one-year mortality. 1/5 patients will sustain another fragility fracture within five years (most commonly in the first year) (1)
- Zoledronic acid (IV bisphosphonate) → significant reduction in subsequent fracture risk and mortality (1)
- Timely inpatient use recommended by National Osteoporosis Guideline Group (NOGG) guidance (2), NICE guidance (3) and a 2023 British Geriatrics Society Call To Action (1)
- Administer as soon as possible post-fracture → 12-18 months of cover
- Uptake low across many hospitals - lack of standardised protocols, unclear prescribing responsibilities, limited clinician awareness

Methods

- Quality Improvement Project at UCLH to evaluate inpatient zoledronic acid use, identify barriers, and implement targeted interventions – **two PDSA cycles**

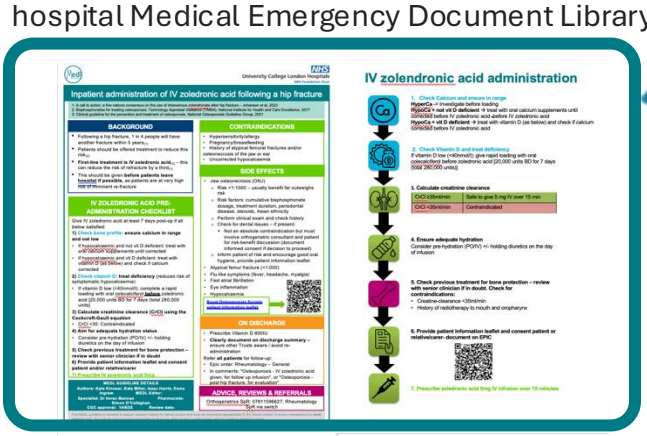
Outcomes:

- Time to completion of necessary blood tests (PTH, calcium, vitamin D) – *determine eligibility for zolendronic acid + enable vitamin D loading pre-treatment*
- Number of eligible patients who received zolendronic acid prior to discharge
- Number of patients who had a bone health plan documented on discharge (e.g. referral to rheumatology for consideration of further doses)

Percentage of patients receiving relevant interventions (see Results section)

Results

- At baseline: 24 hip fracture patients eligible for zolendronic acid – only 5 received it (20%). Only 34% had bone health plans documented at discharge
- **Barriers identified:**
  - Timely blood tests
  - Lack of clarity r.e. eligibility (e.g. renal function, hydration status, previous treatment)
  - Lack of standardised pathway
- **Intervention 1:** development of a structured, accessible guideline + education sessions for orthopaedic team
- Re-audit: 50% of eligible patients received zolendronic acid. 60% had a bone health plan documented at discharge. No improvement in timely bloods: only 35% had bloods within 24hrs (pre-intervention = 50%)
- **Intervention 2:** approval from Use of Medicines Committee, guideline approved and uploaded to hospital Medical Emergency Document Library



Summary and Future Directions

- Education + a clear pathway + an accessible guideline → improvements in zolendronic acid prescribing at UCLH – but still significant room for improvement
- Plan for education sessions + raising awareness of new guideline/pathway → re-audit
- Accessibility + clarity of pathway offers a scaleable model for other trusts aiming to enhance secondary fracture prevention after a hip fracture

References

1: A call to action: a five nations consensus on the use of intravenouszolendronate after hip fracture – Johansen et al, 2023
2: Bisphosphonates for treating osteoporosis, Technology Appraisal Guidance (TA464), National Institute for Health and Care Excellence, 2017
3: Clinical guideline for the prevention and treatment of osteoporosis, National Osteoporosis Guideline Group, 2021