MANAGEMENT OF HIP FRACTURE

Many disciplines, specialties and agencies are involved in managing patients with a hip fracture. Coordinated provision of acute care, rehabilitation and continuing support is essential

TRANSPORT TO HOSPITAL

☑
- Transport to hospital from the site of the injury should be undertaken as quickly as possible
- Training of all ambulance personnel should include recognition of possible fractured hip in an elderly person, often signified by:
  - history of fall
  - presence of hip pain
  - shortening and external rotation of the lower limb
- If necessary, pain relief should be given as quickly as possible using intravenous opiate analgesia, carefully titrated and supervised for effect, starting with a low dose
  If this is not possible consider analgesia using entonox
- If the patient faces a long journey or delay before transfer, consider use of an indwelling catheter

MANAGEMENT IN A&E

☑ Patients suspected of having a fractured hip should be assessed by medical staff as soon as possible, preferably within one hour

D Early assessment, in A&E or on the ward should include a formal recording of:
- pressure sore risk
- hydration and nutrition
- fluid balance
- pain
- core body temperature using a low reading thermometer
- continence
- co-existing medical problems
- mental state
- previous mobility
- previous functional ability
- social circumstances

D
- Use soft surfaces to protect heel and sacrum from pressure damage
- Keep the patient warm
- Administer adequate pain relief to allow regular, comfortable change of position
- Instigate early radiology
- Measure and correct any fluid and electrolyte abnormalities

B If very high risk of pressure sores, use a large-cell, alternating-pressure air mattress or similar pressure-decreasing surface

D Transfer patient to ward within two hours of arrival in A&E

DIAGNOSIS

NB A normal x-ray does not necessarily exclude a fractured hip

D
- **Magnetic resonance imaging (MRI)** is the investigation of choice where there is doubt regarding the diagnosis, e.g. a radiologically normal hip in a symptomatic patient.
- If MRI is not available or not feasible, perform a **radioisotope bone scan** or **repeat plain radiographs** (after a delay of 24-48 hours), perhaps with additional views
- Administer adequate and appropriate **pain relief** before the patient is transferred from a trolley to the x-ray table

PREOPERATIVE CARE

A The routine use of **traction** *(either skin or skeletal)* does not appear to have any benefit and is **not recommended**

A All patients undergoing hip fracture surgery should receive **antibiotic prophylaxis**

☑ Bacteriuria should **not** be a reason to postpone surgery

A Consider **prophlyaxis against venous thromboembolism (VTE)**
- **Mechanical prophylaxis** to reduce risk of asymptomatic VTE (intermittent pneumatic compression or foot pumps)
- **Aspirin** for all patients (150 mg orally for 35 days)
- **Heparin** reserved for selected patients at high risk of VTE

D Assess (clinical and laboratory) possible **hypovolaemia** and **electrolyte balance**, and correct deficiencies

C Check **oxygen saturation** on admission and administer supplementary oxygen to all patients with hypoxaemia

EARLY POSTOPERATIVE MANAGEMENT

D Regular assessment and formal charting of pain scores should be adopted as routine practice in postoperative care

B **Monitor oxygen saturation** routinely to reduce incidence of hypoxaemia, continue for as long as the tendency to hypoxaemia persists

C **Supplementary oxygen** is recommended for at least six hours after general or spinal / epidural anaesthesia, at night for 48 hours postoperatively and for as long as hypoxaemia persists as determined by pulse oximetry

B Monitor fluid and electrolyte management in elderly patients

☑
- If the patient's overall medical condition allows, **mobilisation** and **multidisciplinary rehabilitation** should begin within 24 hours postoperatively
- **Weight bearing** on the injured leg should be allowed

HIP FRACTURE SURGERY

C **Patients should be operated on as soon as possible** (within 24 hours) during standard daytime working hours, including weekends, if their medical condition allows

INTRACAPSULAR FRACTURES

UNDISPLACED INTRACAPSULAR FRACTURES

D Most undisplaced intracapsular fractures that are treated surgically should have **internal fixation**, except in the very elderly, when hemiarthroplasty may be considered

DISPLACED INTRACAPSULAR FRACTURES

B Assessment prior to surgery must consider the patient's age, mobility, mental state, pre-existing bone and joint pathology

B
- Younger, active, fit patients: consider **internal fixation**
- Active patients with an anticipated survival of more than a few years should be considered for **internal fixation, total hip replacement** or **hemiarthroplasty**
- Patients with an anticipated survival of <3 years and patients whose activity level is low: consider **hemiarthroplasty**
- Bed- or chair-bound patients: **treat conservatively**

HEMIARTHROPLASTY

C **Cement** should be used when undertaking hemiarthroplasty unless there are cardiorespiratory complications

B Bipolar hemiarthroplasty should not be performed in preference to **unipolar hemiarthroplasty**

C The **anterolateral approach** is recommended for hemiarthroplasty surgery

TOTAL HIP REPLACEMENT

D In patients with pre-existing joint disease, medium/high activity levels and a reasonable life expectancy, **total hip replacement** may be appropriate as the primary treatment

EXTRACAPSULAR FRACTURES

B Extracapsular hip fractures should all be treated surgically unless there are medical contraindications

☑ Osteotomy is rarely indicated, but may be relevant if used in conjunction with a fixed nail plate

ANAESTHETIC MANAGEMENT

D Anaesthesia should be carried out, or closely supervised, by an anaesthetist with sufficient experience of anaesthesia in elderly patients

B **Regional anaesthesia** is recommended for patients undergoing hip fracture replacement

☑ Administration of spinal or epidural anaesthesia should be delayed until 10-12 hours after the administration of low molecular weight heparin

REHABILITATION AND DISCHARGE

ASSESSMENT

B Within 48 hours of admission, **a corroborated history** should be obtained, which should include:

- premorbid function and mobility
- available social support
- current relevant clinical conditions
- mental state

A Patients with co-morbidity, poor functional ability and low mental test scores prior to admission should undergo rehabilitation in a **Geriatric Orthopaedic Rehabilitation Unit**

REHABILITATION

A Consider **diet supplementation** with high energy protein preparations containing minerals and vitamins

B **Multidisciplinary team working** facilitates the rehabilitation process

DISCHARGE MANAGEMENT

B **Supported discharge schemes** should be used to facilitate the safe discharge of elderly hip fracture patients and reduce acute hospital stay

☑
- The patient should be central to discharge planning. The views of carers are also important
- Liaison between hospital and community (including social work) facilitates the discharge process
- The patient, carer, GP and other community services should be given as much notice as possible of the date of discharge
- Discharge should not take place until arrangements for postdischarge support are in place and the patient is fit for discharge
- Written information on medication, mobility, expected progress, pain control and sources of help and advice should be available to patient and carer
- GPs have an important role in postdischarge rehabilitation and should receive early, comprehensive information on hospital stay, services arranged and follow up arrangements
- Consider prevention of falls, especially potential household hazards, footwear, provision of adaptive equipment / walking aids and alarm systems

The Scottish Intercollegiate Guidelines Network (SIGN) supports improvement in the quality of health care for patients in Scotland by developing and disseminating national clinical guidelines and facilitating their implementation into practice.

SIGN guidelines provide recommendations for effective healthcare based on current evidence.

The recommendations are graded **A B C D** to indicate the strength of the supporting evidence.

Good practice points ☑ are provided where the guideline development group wish to highlight specific aspects of accepted clinical practice.

Details of the evidence supporting these recommendations and their application in practice can be found in the full guideline, available on the SIGN website: **www.sign.ac.uk.**

This guideline was issued in January 2002 and will be considered for review in 2005.

For more information about the SIGN programme, contact the SIGN Executive or see the website.

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Prevention and Management of Hip Fracture in Older People

PREVENTING HIP FRACTURE: RISK FACTORS FOR FRACTURES AND FALLS

Key risk factors for fracture *(bone related):*

- previous low trauma fracture after the age of 50
- maternal history of hip fracture
- current smoking
- low body weight

Assessment of bone mass is probably the most powerful bone-related predictor of future hip fracture

Identifiable risk factors for falls

- muscle weakness
- abnormality of gait or balance
- poor eyesight
- drug therapy
  – hypnotics / sedatives / diuretics / antihypertensives
- neurological disease e.g. Parkinson's disease, stroke
- foot problems/ arthritis
- layout of home environment (e.g. loose or slippery floorcovering)

A
- **Assess the risk of hip fracture** and **falls** in older people using identified risk indicators *(patient and environment)* and base any intervention on this risk assessment
- Those at increased risk should be offered **multiple interventions*** aimed at reducing the identified individual and environmental risks

B **Hip protectors** are recommended in men and women at high risk of hip fracture, particularly older people in care homes, although problems with compliance should be recognised

** e.g. exercise programme (focusing on strength, flexibility and which is weight bearing), balance training, and modification of identified hazards.*

COST-EFFECTIVE TARGETING OF PREVENTIVE INTERVENTIONS

B Assessment of recognised risk factors for low **bone mineral density (BMD)** is the most cost-effective method of targeting interventions that act on low bone density. Mass screening for low BMD is less cost-effective and is not recommended

All patients who are assessed as being at risk of hip fracture should be treated with calcium and vitamin D

A All patients who are assessed as being at high risk of hip fracture should be treated with:

- **hip protectors,** if the patients are living in a care home setting and are assessed as being compliant
- the **bisphosphonates** alendronate or risedronate when risk is assessed by measuring BMD

☑ Where access to BMD measurement is impractical, bisphophonates may be considered in patients with strong evidence of pre-existing osteoporosis