SPECIALTY: GENERAL MEDICINE
CLINICAL PROBLEM:
FALLS, SYNCOPE AND CARDIOVASCULAR DISEASE IN THE ELDERLY

BACKGROUND

- 30% > 65 year olds in community fall at least once per year.
- 12% > 65 year olds fall twice or more
- FALL INCIDENCE INCREASES WITH AGE
- 50% of Injuries → HOSPITAL ADMISSION
- Fear of Falling → DIMINISHED MOBILITY AND SOCIAL ISOLATION
  Negative impact of falls greater if remains unexplained.

COMMON CAUSES

Age Related Sensory Impairment ↓ vision/ ↓ balance (↑ neuropathy)
Locomotor disorders Parkinsons Disease/Arthritis/Stroke/Myopathy
Environment – “old people in old homes”
Elder Abuse
DRUGS – especially vasodilators (orthostatic hypotension), sedatives, antipsychotics
NEUROLOGICAL DISORDERS
  - Vestibular Disease
  - Epilepsy
  - VBI (Rare and only in conjunction with OTHER brainstem symptoms/signs)
CARDIOVASCULAR DISORDERS
  - Arrhythmia e.g.Tachycardia-Bradycardia
  - Aortic Stenosis
  - Neurocardiogenic Syncope
  - Carotid Sinus Hypersensitivity
  - Orthostatic Hypotension

- Bradycardic and Hypotensive Disorders are a major cause of falls in the elderly – and have a high
diagnostic yield with appropriate investigation
- 30% Cardiovascular syncope presents as unexplained or recurrent falls
  30% patients with unexplained falls lose consciousness but deny this afterwards (amnesia) therefore
a witness history is vital

FALLERS – IMMEDIATE APPROACH TO MANAGEMENT

1. Deal with injury
2. Take careful history
   Any evidence of trip/slip/loss of footing/ stairway fall?
   If YES:
     Reassurance
     Consider “environmental review” if a recurrent problem
     (Commnity OT and Physio/Day Hospital)
   If NO:
     Detailed witnessed history of any evidence of
     - Loss of consciousness
     - Aura (or other warning)
     - Dizziness prior to fall.

Number – IF > 2 – REFER FOR INVESTIGATION
SYNCOPE = Transient Loss of consciousness and Postural Tone with spontaneous recovery
Occurs whenever hypotension and/or bradycardia is sufficiently profound to produce diffuse cerebral ischaemia and loss of neural function. Can occur at any age but most common in age groups 14 – 25 and over 60 years.

NEUROCARDIOGENIC (Vaso-vagal) Syncope
- 3 PHASES → AURA lasting seconds – minutes
  → L.O.C.
  → Post syncopal period (+/- visual disturbance/dysarthria)

  • UPRIGHT > SITTING • PRECIPITANTS

  Emotional Stress       Pain
  Anxiety                Anticipation of pain/anxiety
  Defaecation/micturition/cough Prolonged standing

Common cardiovascular causes include: Ventricular tachycardia/Severe aortic stenosis/Hypotrophic obstructive cardiomyopathy/Complete heart block
- Episodes brief, recovery spontaneous and rapid (distinguishes Syncope from Epilepsy)
- However, resulting Cerebral Ischaemia may → Tonic/Clonic Seizure (so called “syncopal convulsion”)
- A prolonged aura, increases the chance of taking evasive action. As the elderly have diminished aura and retrograde amnesia, falls and syncope may be indistinguishable.

Management of Neurocardiogenic Syncope
1. Education - Avoid/anticipate precipitating factors
   - Respond to Aura (if possible)
   - Avoid “prosycopal” drugs (if possible) – esp. vasodilators, thiazides
   - Relaxation/desensitisation therapy
2. “Support Cardiovascular System” - Compression stockings/Beta Blockers/Fludrocortisone (occasionally)
   Dual Chamber Pacing (rarely)

CAROTID SINUS HYPERTENSITIVITY (CSH)
- Presents as Dizziness, Syncope, Falls in the elderly and is associated with IHD and HTN
- Virtually NEVER occurs in patients below 50 years
- Presents as dizziness precipitated by

  Head turning       Straining
  Tight collars      Visc. Pain
  Shaving            Sudden Upward Movement

Caro-inhibitory CSH → Asystole > 3s Identification vital as dual chamber pacing is hugely effective

ORTHOSTATIC HYPOTENSION – most commonly associated with Drugs:
Cardiac Disease - Heart Failure
- Aortic Stenosis
Autoonomic Neuropathy e.g. Diabetes
Parkinson’s Disease
Idiopathic

History: For timing and relationship with posture
  ? Associated autonomic features - sweating/palpitation/diarrhoea

Correctly recorded Orthostatic BP Responses
Laying: After resting supine or semi-supine for minimum of 5 minutes
STANDING (Unassisted): take BP @ 60 sec intervals for minimum of 3 mins.

CVS examination for cardiac murmurs (esp. aortic stenosis)
CNS examination for features of Parkinsons Disease or Neuropathy
Blood glucose

MANAGING ORTHOSTATIC HYPOTENSION
ALWAYS REVIEW AND WHEN POSSIBLE MANIPULATE MEDICATION -
Elevate head of bed to 20°
Education - night time/early a.m./post prandial danger times
Support stockings
Drugs: Fludrocortisone/NSAIDs (if no contraindication)
ASSESSING THE PATIENT WITH SUSPECTED CARDIOVASCULAR DIZZINESS OR FALLS
BE SYSTEMATIC - ALWAYS ASK FOR WITNESS CONFIRMATION

HISTORY
Frequency/duration/precipitating and relieving factors
Palpitation/missed heart beats
Dyspnoea
LOC
Pallor/flushing
Timing - sleep/wakening/meals/activity
Posture/neck movements
Exertion

REVIEW DRUG HISTORY AND DOSES:
Tricyclic Antidepressants
Anticonvulsants
Antipsychotics
Anti Parkinsonian Drugs
Anti hypertensives
Antianginals
Insulin / oral hypoglycaemics.

EXAMINATION
Heart Rate and Rhythm
Auscultation – heart/carotid and subclavian bruit
Correctly recorded laying/standing BP – SEE PAGE 2

INVESTIGATION:  Hb., Renal function, liver function, glucose, calcium (N.B. not x-ray cervical spine)
Refer to Syncope Clinic if Consider:
Arrhythmia  Carotid Sinus Hypersensitivity
Orthostatic hypotension  Neuro cardiogenic syncope
Aortic Stenosis  Post Prandial Hypotension

CONSIDER REFERRAL TO THE SYMCOPE INVESTIGATION CLINIC IF:
• >2 Unexplained falls and/or 1 episode unexplained syncope (LOC) in previous year
• “Dizziness” if strong suggestion of cardiovascular disease/pre-syncpe, e.g. aura or being light headed
  Also consider referral for direct echo
  N.B. If associated with Vertigo/Deafness consider referral to Audiological Physician
• Assessment and management orthostatic hypotension

WHERE?  Initial assessment OPD….. Then specialist Syncope Investigations in The Munro Unit
WHAT?  Echo/24 hour ECG monitoring/24 hour ABPM
  Carotid Sinus Massage
  Head-Up Tilt Test (+/- GTN Challenge)
  Autonomic Function Tests
  Hyperglucidic Test Meal (Post Prandial Hypotension and Hypoglycaemia)
(Patient information leaflets are available for each of the above tests).

TILT-TESTING
Chance development in 1980’s from physiological investigations into changes of posture.
(Head up-right) Tilt Syncope identical to spontaneous neurocardiogenic syncope.
• Aura
• Identical HR + BP changes
• Rarely provokes symptoms in normal individuals (sensitive and specific)
• Valuable investigation in individuals predisposed to syncope
• Morning
• Cardioactive drug withdrawal 12 hours previously
• Continuous heart rate and BP monitoring
• 70° Tilt for up to 45 minutes
  (+) VE IF:  Symptom reproduction with hypotension and/or bradycardia
Examples of leaflets available – Worried about Falls? An Independent View from Consumers’ Association Published November 2000


AUTHOR: Dr R Haigh, Consultant Physician, St Richard’s Hospital, The Royal West Sussex Trust.

OTHERS INVOLVED: Dr R Griffin, Consultant Physician, St.Richard’s Hospital, The Royal West Sussex Trust. Dr S Hammans, Consultant Neurologist, St. Richard’s Hospital, The Royal West Sussex Trust. LRMG Committee Members.

Date Published: March 2003 Review Date: March 2005