Impression: collapse ?cause

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Outline

- Five collapse scenarios
- A bit about syncope
- European Society of Cardiology (ESC) guidelines on the evaluation and management of syncope
- A brief word about the NICE guidelines on TLOC because you need this for your SCEs ☹
- And don’t forget driving advice!

Collapse quiz!

In each case, state what you should do next, including advice about driving

(assume no acute illness and no serious injuries)

Scenario 1

A 60-year-old man was admitted to AMU following a blackout. He said he was in the butcher's when he experienced brief dizziness then found himself on the floor. This has never happened before. His wife gave a good eye-witness account of syncope.

His past medical history included type 2 diabetes and hypertension for which he was taking metformin, ramipril and bendroflumethiazide.

On examination there was no abnormality to find.

Bloods, lying and standing BP and 12-lead ECG were normal.

Scenario 2

A 20-year-old woman was admitted following a collapse. Eye-witnesses reported she felt unwell (pale and nauseated) while standing in the pub and decided to go outside for some fresh air. Before reaching the exit she collapsed and was observed to jerk all four limbs. She recovered quickly and an ambulance was called.

The patient described feeling like her vision was closing in, and palpitations, before blacking out. She has had several previous collapses at work (in a café kitchen) which were similar. There was no family history of collapses or sudden death.

On examination, she was back to normal but complaining of feeling ‘washed out’. Clinical examination, lying and standing BP and 12-lead ECG was normal.

Scenario 3

An 18-year-old man was admitted for a routine arthroscopy of the knee. In the anaesthetic room he was observed to become asystolic for 10 seconds during cannula insertion. The procedure was postponed while the anaesthetist sought more information.

The patient's mother stated that the patient and his father were 'fainters' and this was usually triggered by unpleasant stimuli.

The anaesthetist phoned the medical registrar to ask, 'Can you get vasovagal syncope while lying down?'

Scenario 4

A 65-year old man was admitted following a collapse. This had never happened before. Eye-witnesses described him waiting at the bus stop, then looking pale and sweaty and feeling unwell briefly before falling to the ground. He made a quick recovery.

His past medical history included a previous MI. He was normally fit and well and did not experience angina. Cardiovascular exam, lying and standing BP, and blood results were normal. A 12-lead ECG showed sinus rhythm and anterior Q waves.

Scenario 5

An 85-year-old woman was found lying on the floor in her nursing home. She had a scalp laceration and an ambulance was called. Her past medical history included paroxysmal atrial fibrillation, hypertension and dementia. She was taking warfarin and bisoprolol 2.5mg od.

On examination she had normal vital signs and was back to her usual self. Blood results were normal apart from an INR of 2.5. A 12-lead ECG showed sinus rhythm and a CT scan of the head was normal apart from atrophy in keeping with the patient's age and severe small vessel disease.

Collapse quiz! Answers

Scenario 1

A 60-year-old man was admitted to AMU following a blackout. He said he was in the butcher's when he experienced brief dizziness then found himself on the floor. This has never happened before. His wife gave a good eye-witness account of syncope.

His past medical history included type 2 diabetes and hypertension for which he was taking metformin, ramipril and bendroflumethiazide.

On examination there was no abnormality to find.

Bloods, lying and standing BP and 12-lead ECG were normal.

Scenario 1: answer

- Single episode of syncope
- No evidence structural heart disease (no ‘red flags’: not during exercise, normal cardiovascular exam, no cardiac history, normal 12-lead ECG)
- Do nothing
- Well, explain things to the patient (obviously)

Scenario 2

A 20-year-old woman was admitted following a collapse. Eye-witnesses reported she felt unwell (pale and nauseated) while standing in the pub and decided to go outside for some fresh air. Before reaching the exit she collapsed and was observed to jerk all four limbs. She recovered quickly and an ambulance was called.

The patient described feeling like her vision was closing in, and palpitations, before blacking out. She has had several previous collapses at work (in a café kitchen) which were similar. There was no family history of collapses or sudden death.

On examination, she was back to normal but complaining of feeling ‘washed out’. Clinical examination, lying and standing BP and 12-lead ECG was normal.

Scenario 2: answer

- Recurrent vasovagal syncope
- On this occasion with jerking movements
- 3 P's present
  - Typical **p**rodrome
  - Upright **p**osture
  - **P**rovoking factors (warm places)
- Advice, tilt training, ?grade 2 support stockings, ?salt

Syncope video

Scenario 3

An 18-year-old man was admitted for a routine arthroscopy of the knee. In the anaesthetic room he was observed to become asystolic for 10 seconds during cannula insertion. The procedure was postponed while the anaesthetist sought more information.

The patient's mother stated that the patient and his father were 'fainters' and this was often triggered by unpleasant stimuli.

The anaesthetist phoned the medical registrar to ask, 'Can you get vasovagal syncope while lying down?'

Scenario 3: answer

- Yes and no – this is ‘situational syncope’
- (Think of all the cardiac arrests you have been to in procedure rooms)
- No treatment apart from to warn the anaesthetist next time!

Scenario 4

A 65-year old man was admitted following a collapse. This had never happened before. Eye-witnesses described him waiting at the bus stop, then looking pale and sweaty and feeling unwell briefly before falling to the ground. He made a quick recovery.

His past medical history included a previous MI. He was normally fit and well and did not experience angina. Cardiovascular exam, lying and standing BP, and blood results were normal. A 12-lead ECG showed sinus rhythm and anterior Q waves.

Scenario 4: answer

- Single episode of syncope
- Structural heart disease (previous MI)
- Always investigate people with abnormal hearts
- Echo, ambulatory ECG are first line tests
- Guidelines say should be referred to a Cardiologist

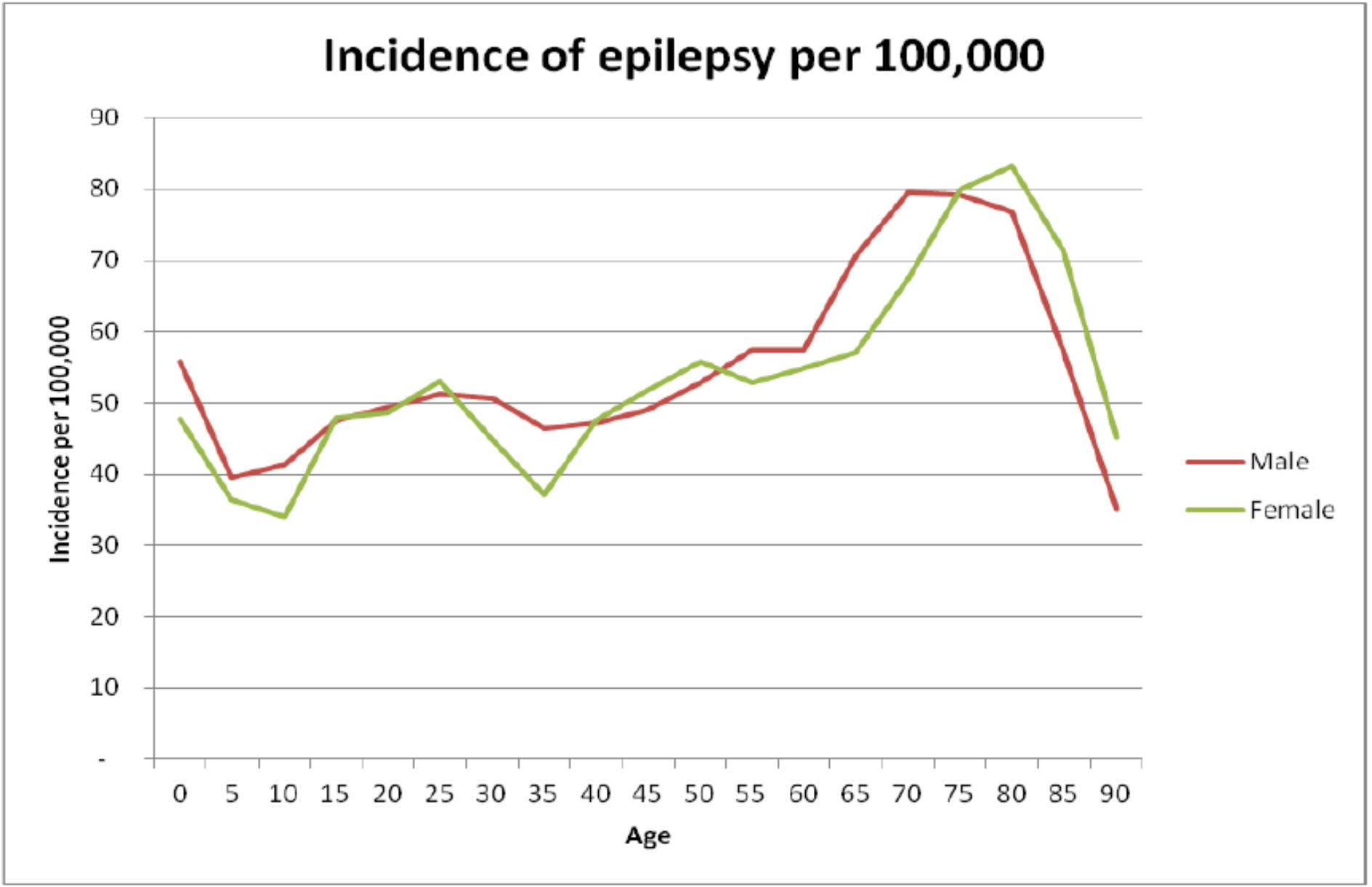
Scenario 5

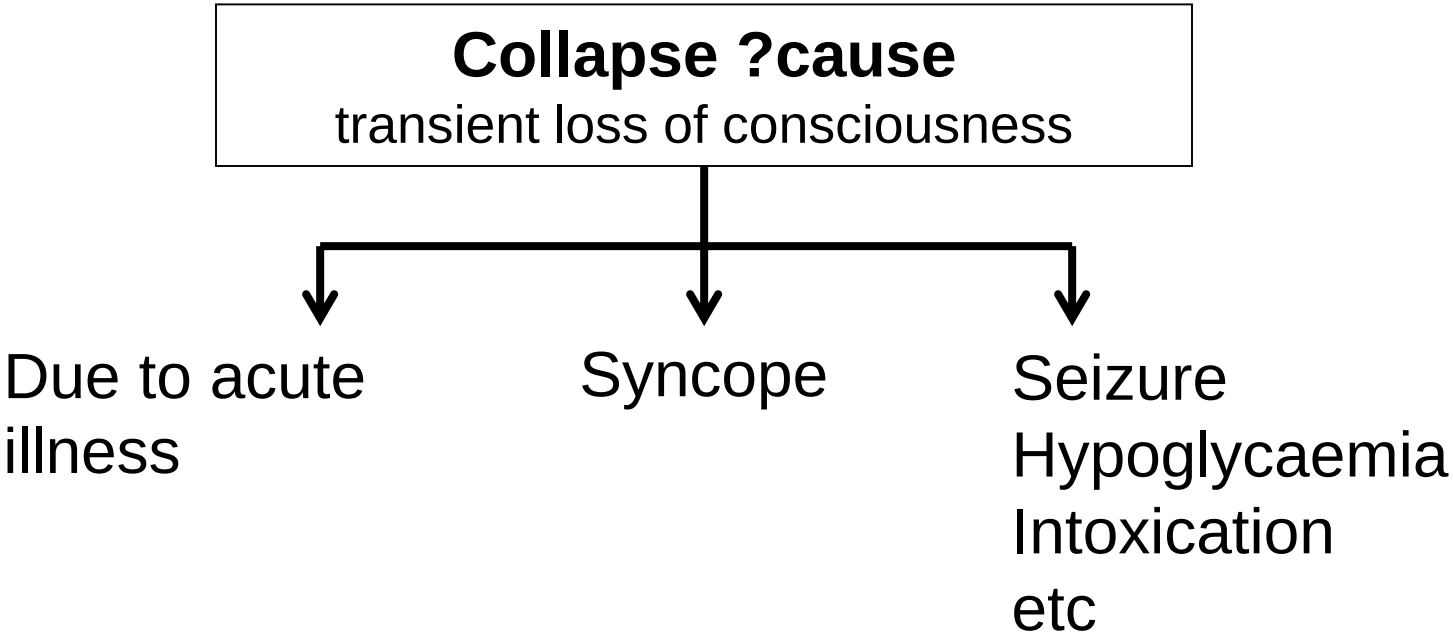
An 85-year-old woman was found lying on the floor in her nursing home. She had a scalp laceration and an ambulance was called. Her past medical history included paroxysmal atrial fibrillation, hypertension and dementia. She was taking warfarin and bisoprolol 2.5mg od.

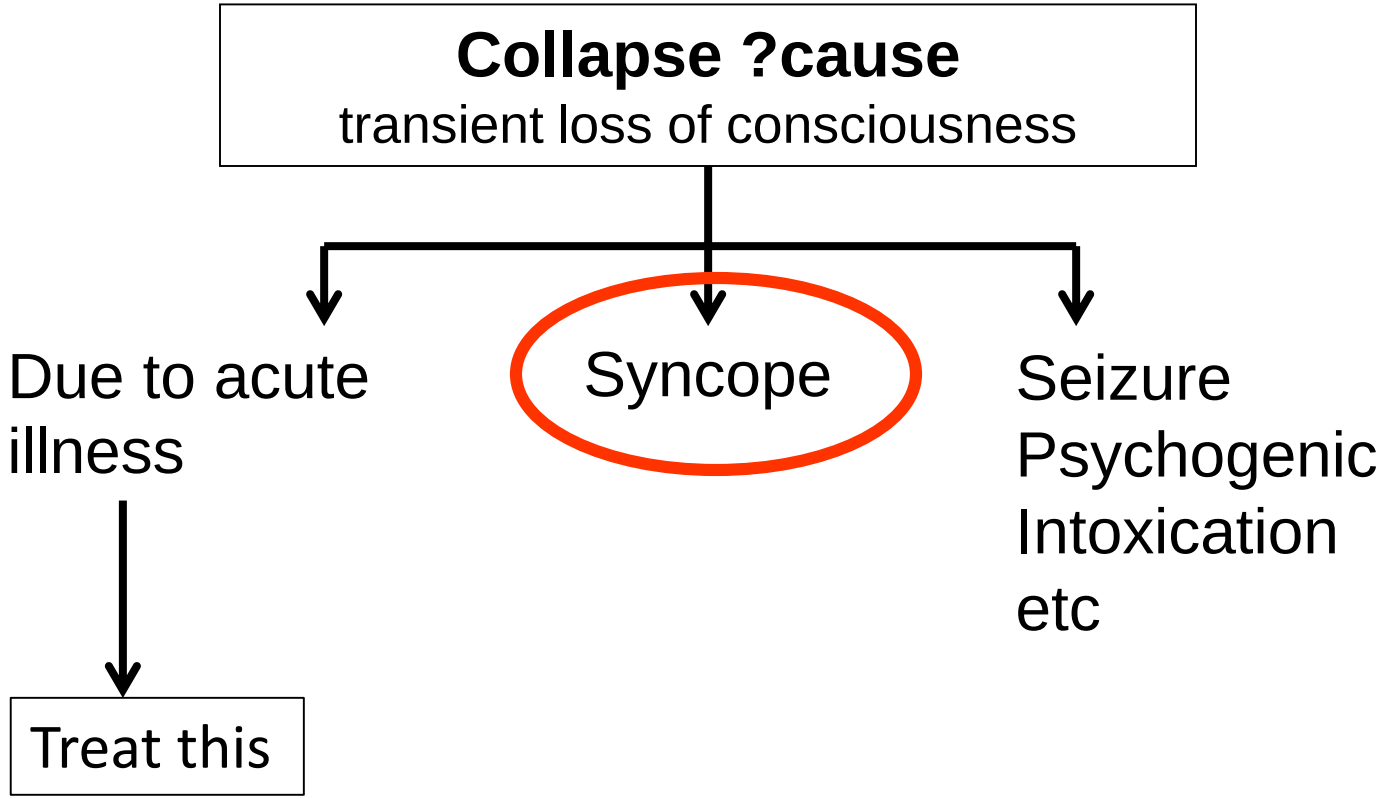
On examination she had normal vital signs and was back to her usual self. Blood results were normal apart from an INR of 2.5. A 12-lead ECG showed sinus rhythm and a CT scan of the head was normal apart from atrophy in keeping with the patient's age and severe small vessel disease.

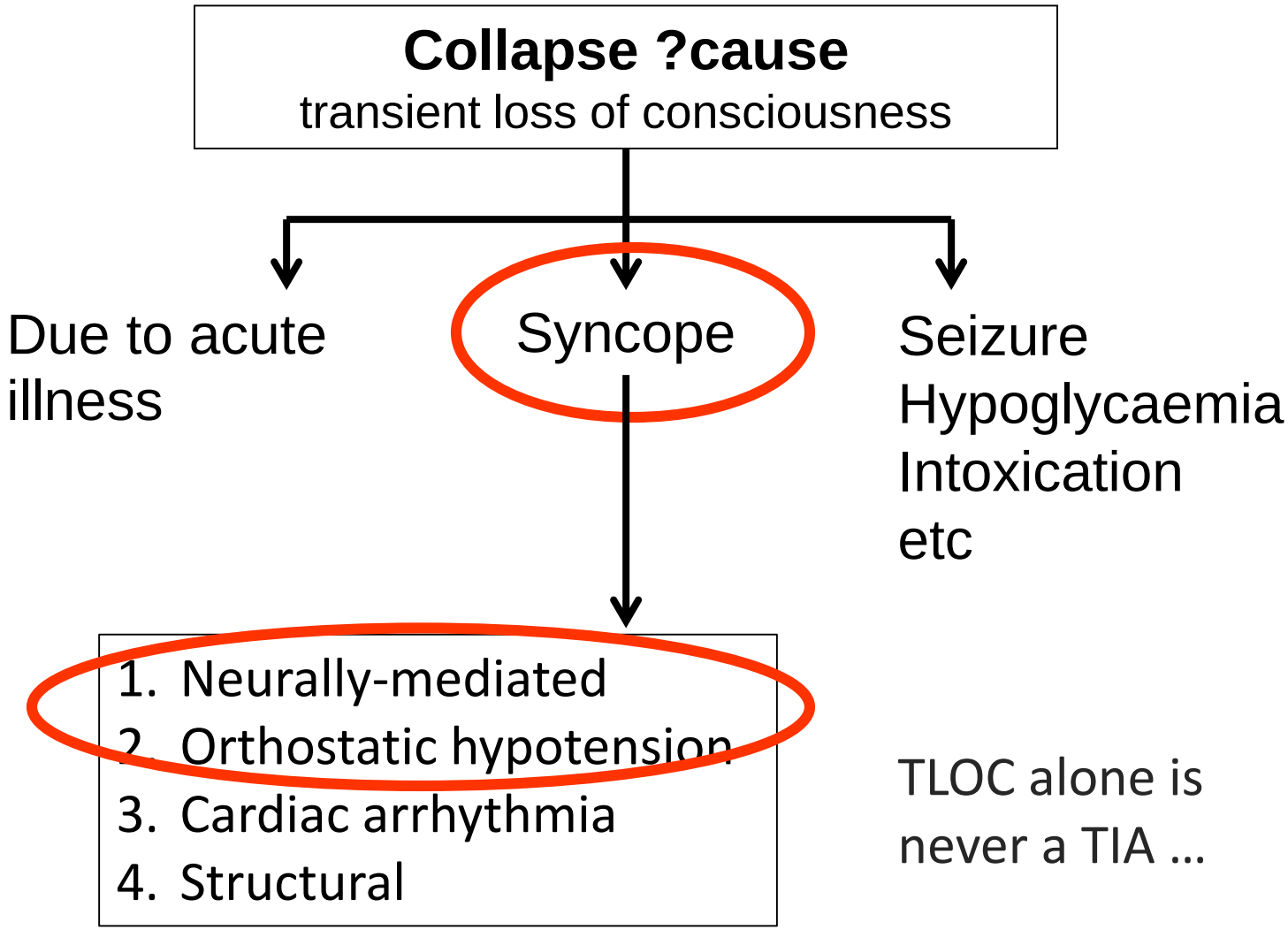
Scenario 5: answer

- Beware of the FLOF!
- Syncope? Seizure? Fall? … no idea!


Incidence of epilepsy per 100,000
Incidence per 100,000
90
80
70
60
50
40
30
20
10
-
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
Age
Male
Female


Collapse ?cause
transient loss of consciousness
Due to acute illness
Syncope
Seizure
Hypoglycaemia
Intoxication
etc


Collapse ?cause
transient loss of consciousness
Due to acute illness
Syncope
Seizure
Psychogenic
Intoxication
etc
Treat this


Collapse ?cause
transient loss of consciousness
Due to acute illness
Syncope
Seizure
Hypoglycaemia
Intoxication
etc
1. Neurally-mediated
2. Orthostatic hypotension
3. Cardiac arrhythmia
4. Structural
TLOC alone is never a TIA …

Syncope (‘interrupt’)

Syncope is a symptom, (not a diagnosis) which has 5 essential elements:

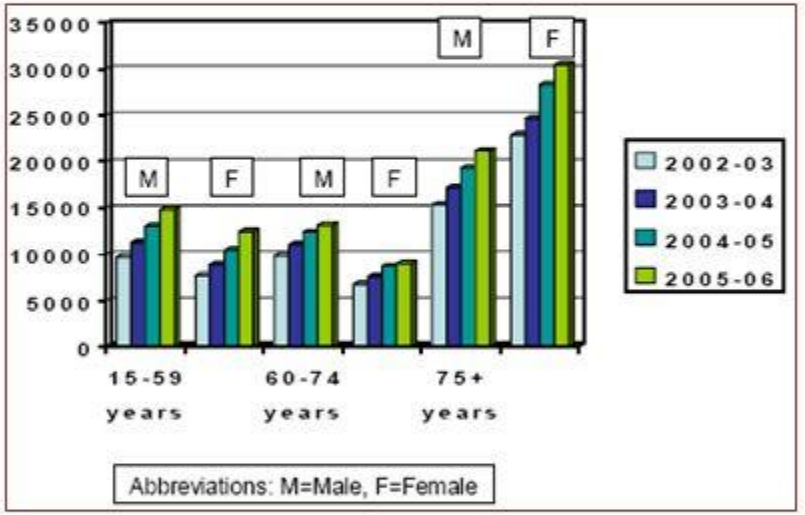
- loss of consciousness
- loss of voluntary muscle tone (→ fall)
- relatively rapid onset
- recovery is spontaneous, complete and usually prompt

The underlying mechanism is transient global cerebral hypoperfusion

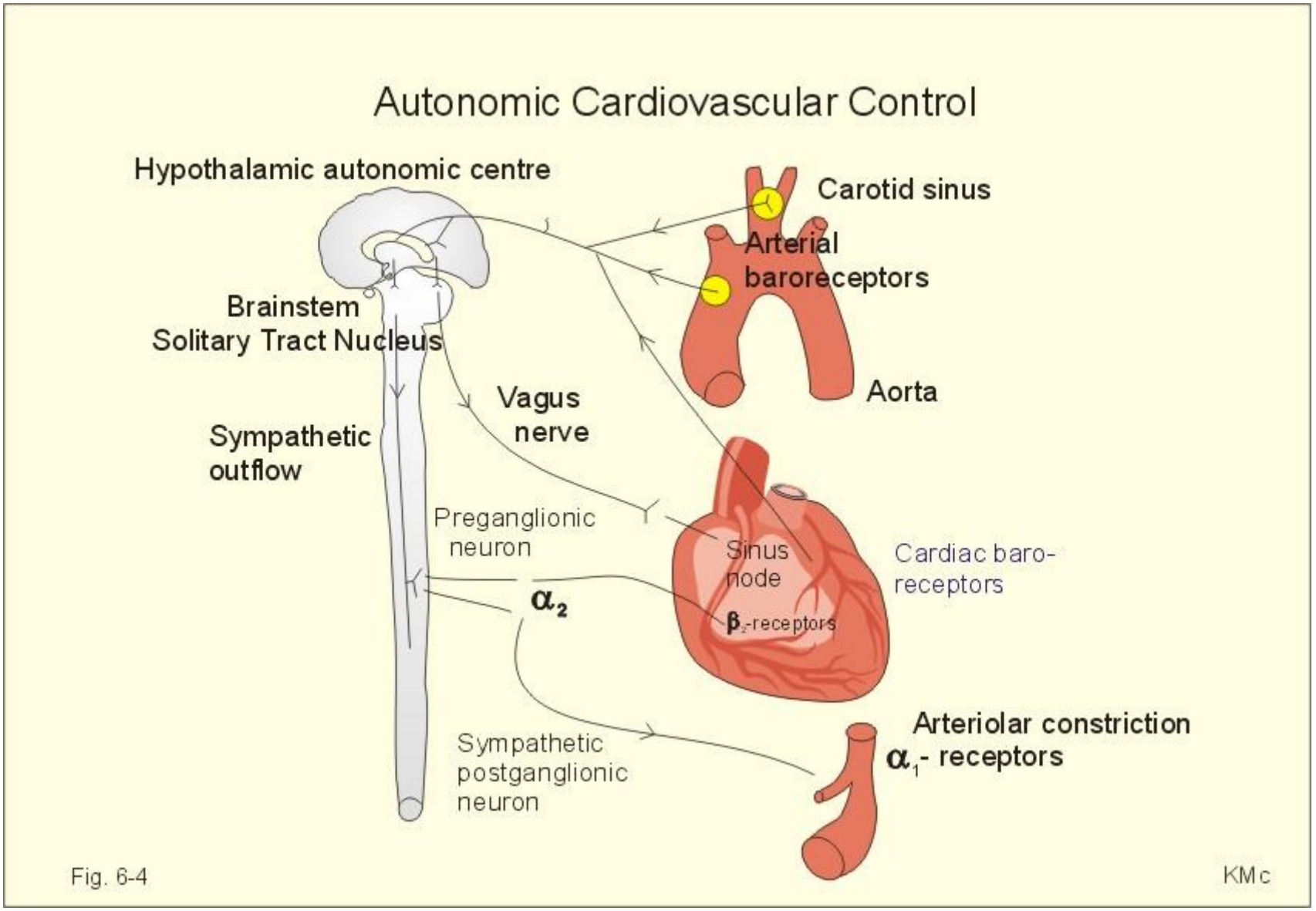
Blackout in the UK: Scale

- 4% ED attendances
  - 550,000 per annum
- Primary care
- 6% Acute admissions
  - >100,000 per annum[1]
  - Average Length of stay 3.9 days
  - Falls not included

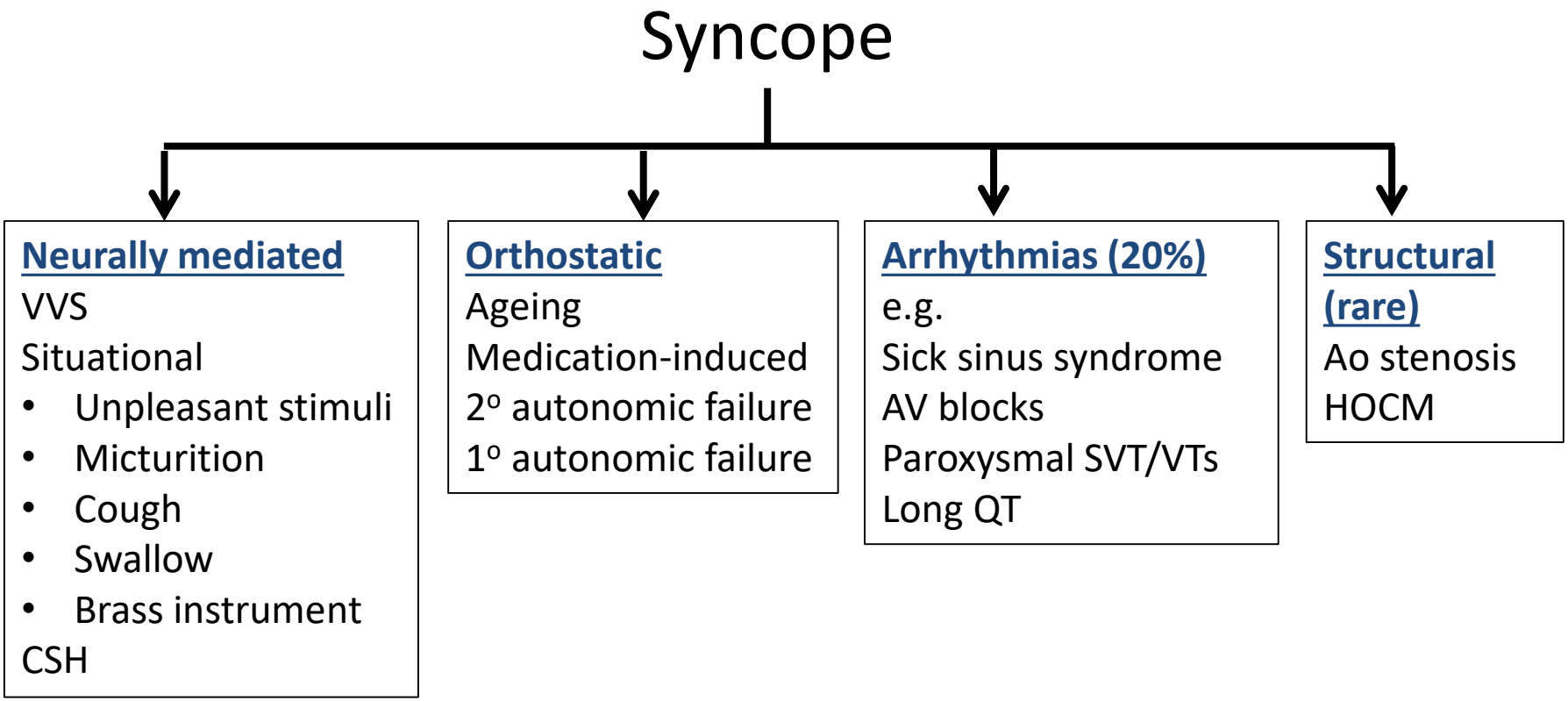
Finished consultant episodes: Syncope /collapse



1 .NHS Health and Social care information centre (2009): Hospital episode statistics


Autonomic Cardiovascular Control
Hypothalamic autonomic centre
Carotid sinus
Arterial baroreceptors
Brainstem Solitary Tract Nucleus
Aorta
Vagus nerve
Sympathetic outflow
Preganglionic neuron
Sinus node
Cardiac baro-receptors
α2
β1-receptors
Sympathetic postganglionic neuron
Arteriolar constriction
α1- receptors
Fig. 6-4
KMc

Causes of syncope in patients referred to syncope services



Revised ESC Syncope Guidelines June 2018

NEW / REVISED CLINICAL SETTINGS AND TESTS:

- Tilt testing: concepts of *hypotensive susceptibility*
- Increased role of prolonged ECG monitoring
- Video recording in suspected syncope
- "Syncope without prodrome, normal ECG and normal heart" (adenosine sensitive syncope)
- Neurological causes: "ictal asystole"

NEW / REVISED INDICATIONS FOR TREATMENT:

- *Reflex syncope:* algorithms for selection of appropriate therapy based on age, severity of syncope and clinical forms
- *Reflex syncope:* algorithms for selection of best candidates for pacemaker therapy
- *Patients at risk of SCD:* definition of unexplained syncope and indication for ICD
- *Implantable loop recorder* as alternative to ICD, in selected cases

2018 NEW/REVISED CONCEPTS in management of syncope

(OUT-PATIENT) SYNCOPE MANAGEMENT UNIT:

- Structure: staff, equipment, and procedures
- Tests and assessments
- Access and referrals
- Role of the Clinical Nurse Specialist
- Outcome and quality indicators

MANAGEMENT IN EMERGENCY DEPARTMENT:

- List of low-risk and high-risk features
- Risk stratification flowchart
- Management in *ED Observation Unit* and/or fast-track to *Syncope Unit*
- Restricted admission criteria
- Limited usefulness of risk stratification scores

The initial evaluation

- History from patient
- History from any available eye-witnesses!
- Cardiovascular examination
- 12-lead ECG
- Lying and standing BP

Common pitfalls

- '…and all four limbs jerked'
- '…and was incontinent of urine'
- '…was talking nonsense'
- '…and felt really tired afterwards'
- '…had palpitations before collapsing'
- '…he injured himself badly'
- '…he went rigid as we dragged him out of the restaurant'

Syncope vs seizure

SYNCOPE MORE LIKELY

- Posture
- Pale, nausea/vomiting, sweaty, palpitations
- Short duration jerky movements, start after LOC
- Quick recovery
- Fatigue for several hours afterwards common
- Incontinence of urine

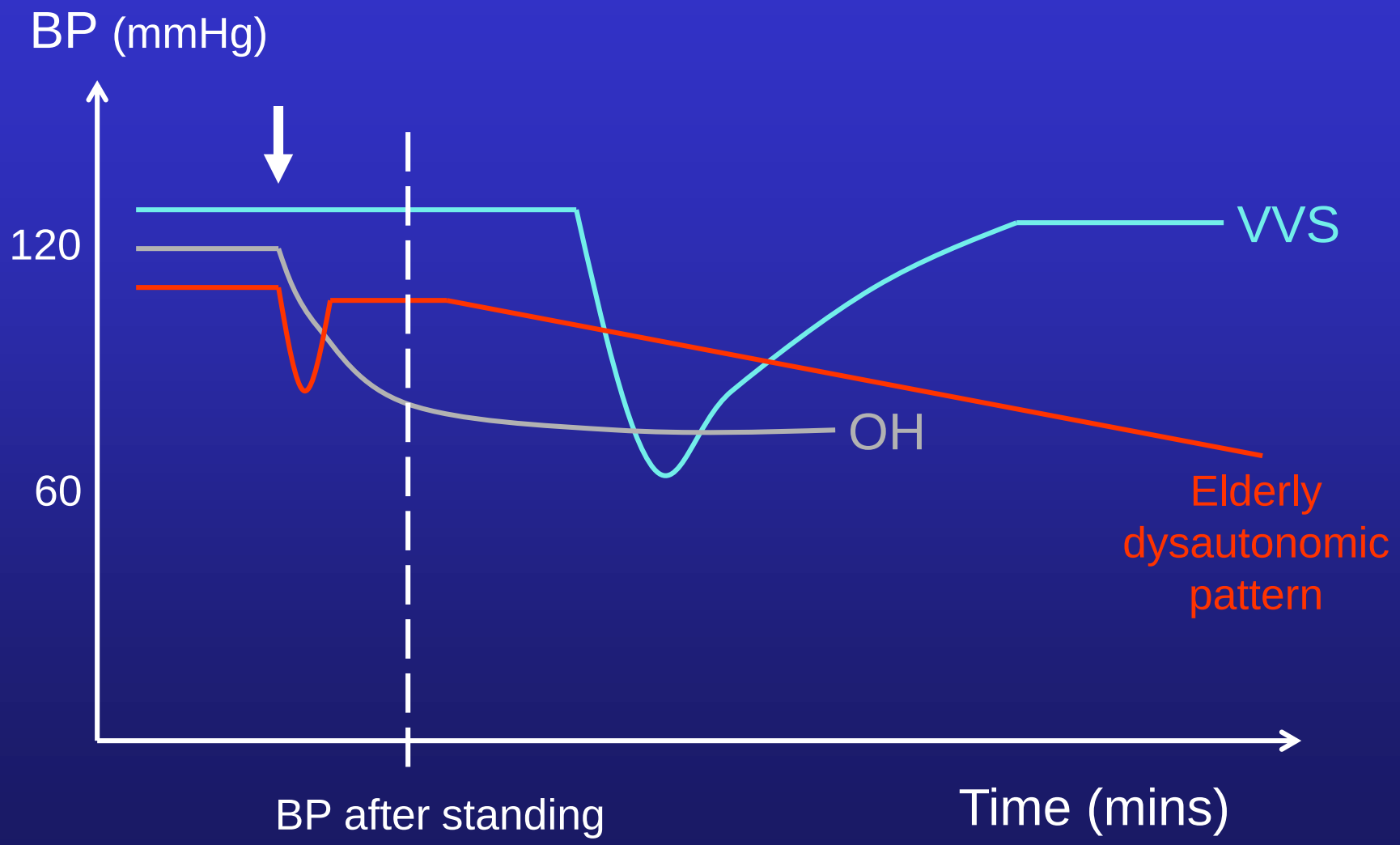
SEIZURE MORE LIKELY

- Aura / blue face
- Prolonged tonic-clonic movements, coincide with LOC
- Automatisms, tongue biting
- Prolonged confusion, headache or drowsy*
- In bed at night
- Faecal incontinence

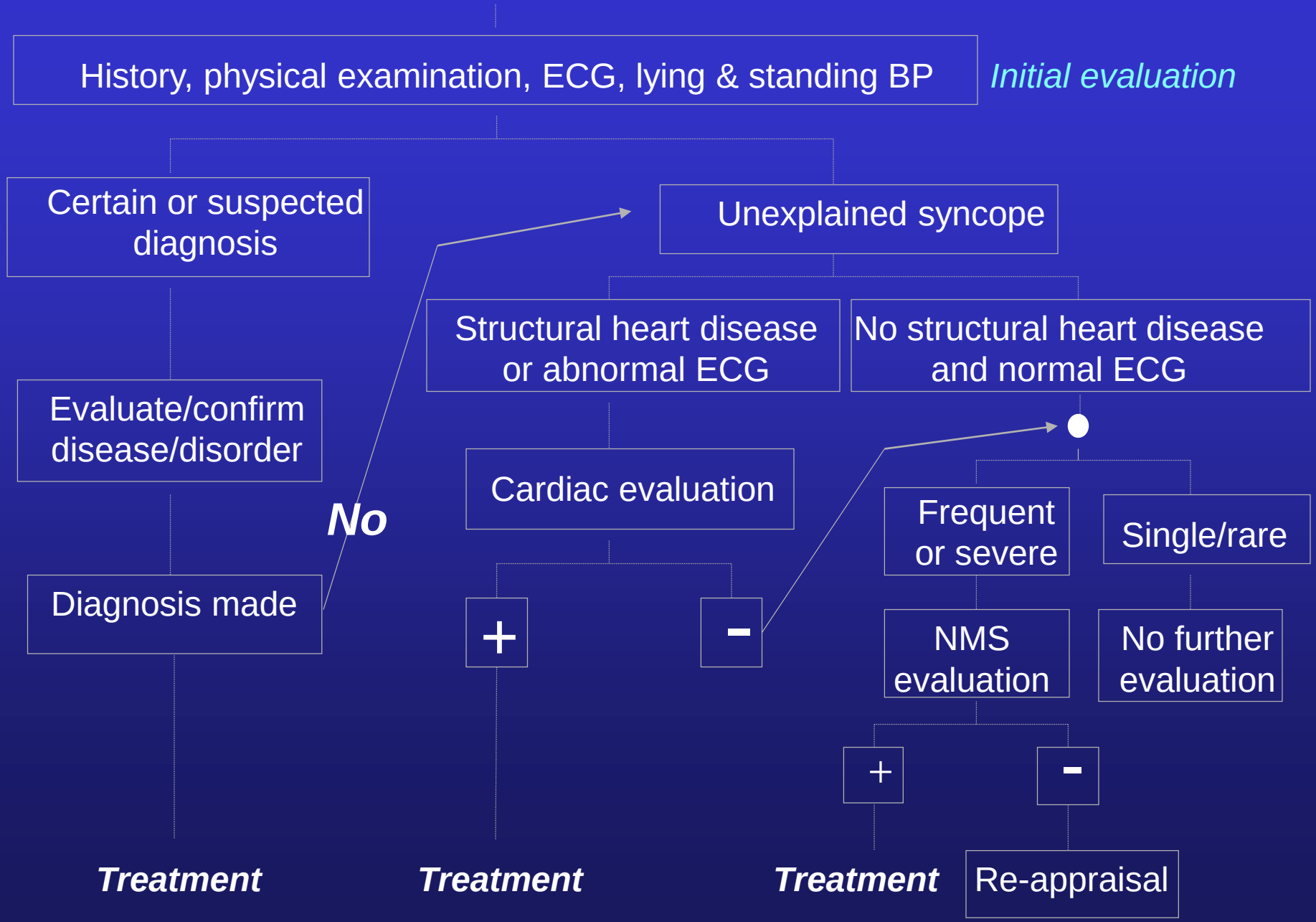
Pitfalls in older people

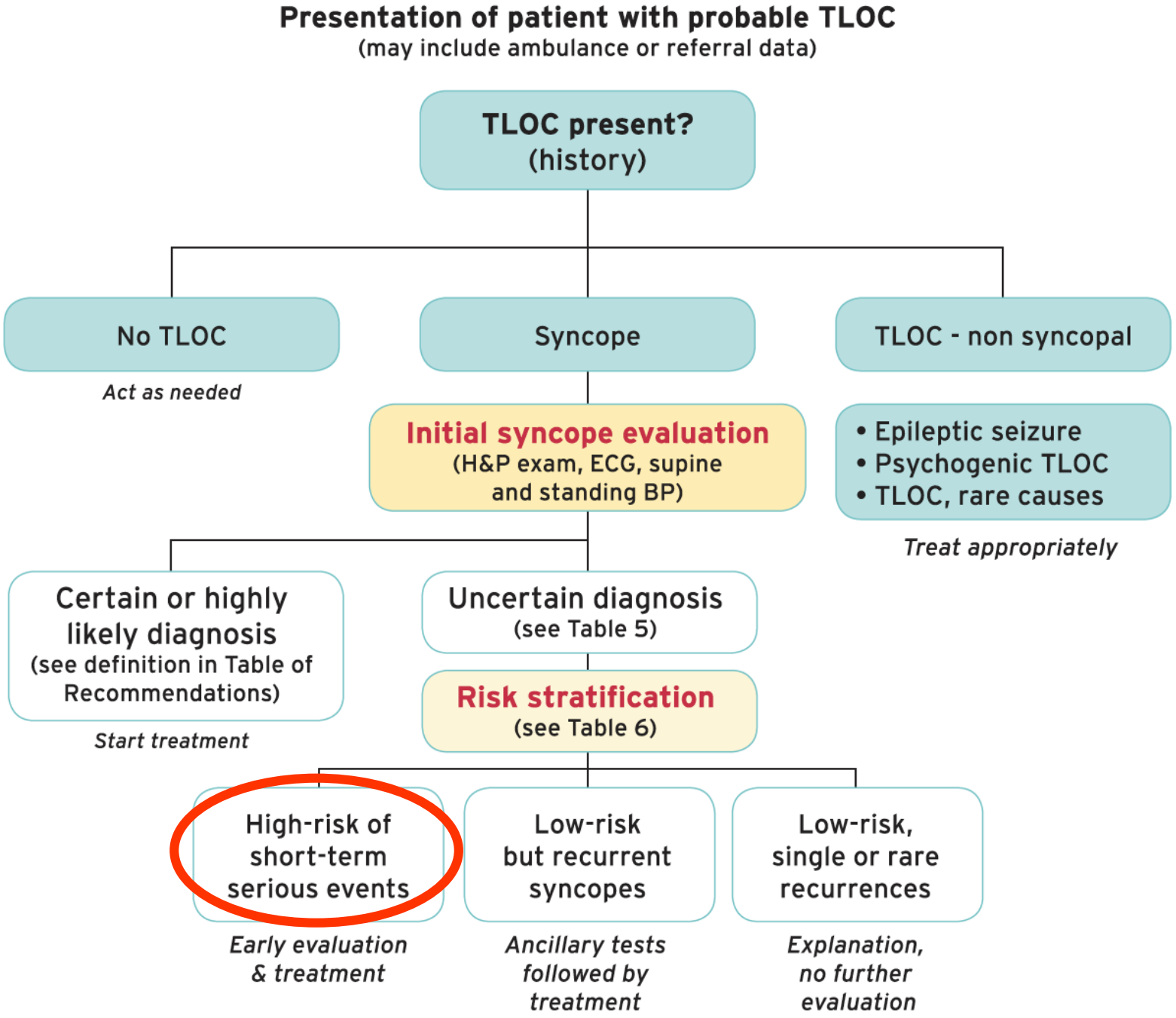
- '…and slumped to one side (sitting)'
- '…I don't know, I must have tripped'
- '…collapsed without warning'
- '…I don't go dizzy, I just feel queer'
- Unwitnessed
- Lying and standing BPs are normal
- More than one diagnosis

BP responses in different types of syncope



Syncope (ESC Guidelines)




Presentation of patient with probable TLOC
(may include ambulance or referral data)
TLOC present?
(history)
No TLOC
Act as needed
Syncope
TLOC - non syncopal
Initial syncope evaluation
(H&P exam, ECG, supine and standing BP)
• Epileptic seizure
• Psychogenic TLOC
• TLOC, rare causes
Treat appropriately
Certain or highly likely diagnosis
(see definition in Table of Recommendations)
Start treatment
Uncertain diagnosis
(see Table 5)
Risk stratification
(see Table 6)
High-risk of short-term serious events
Low-risk but recurrent syncopes
Low-risk, single or rare recurrences
Early evaluation & treatment
Ancillary tests followed by treatment
Explanation, no further evaluation
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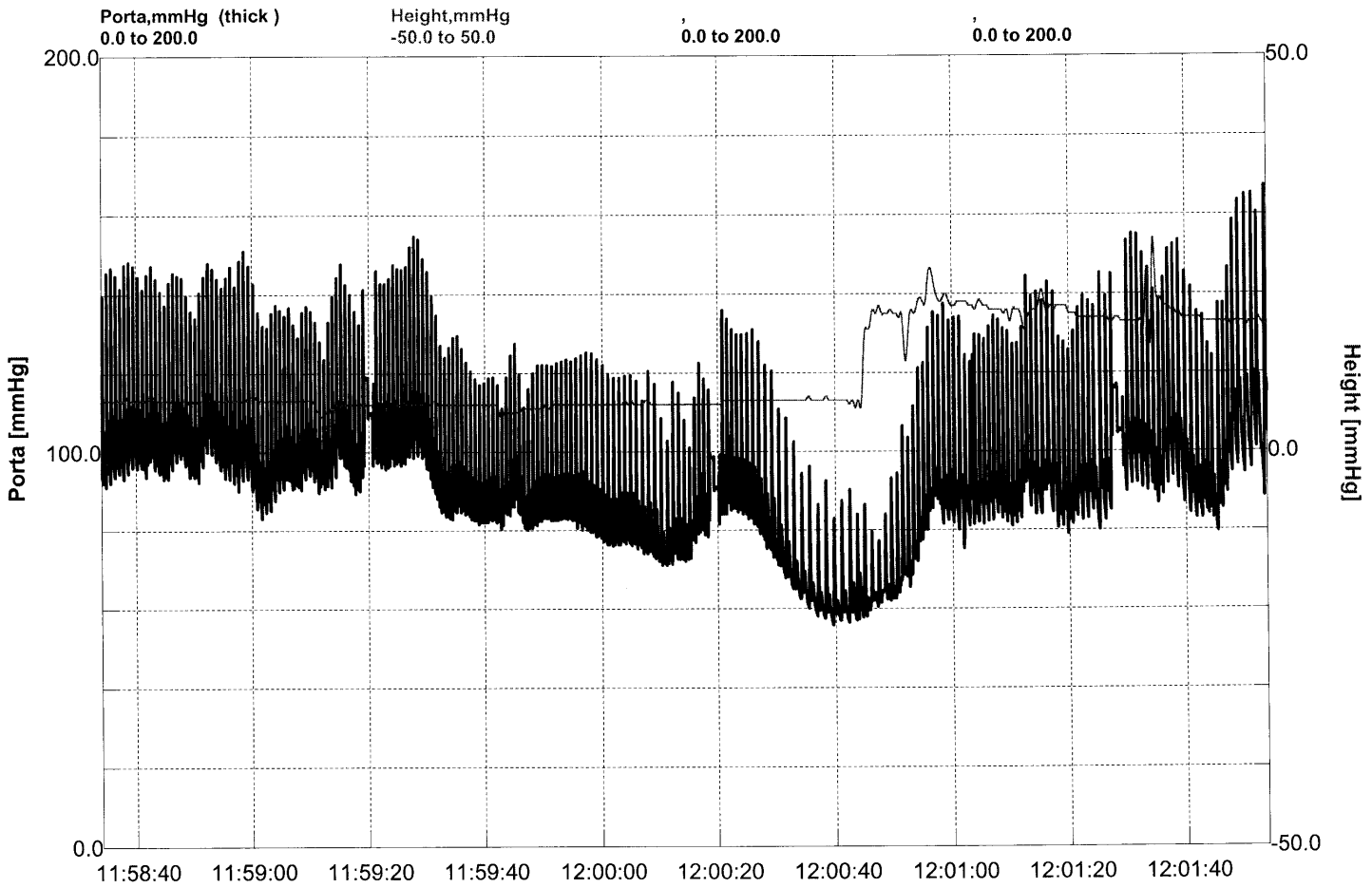
Implantable event recorder (Reveal ® Device)




11:21 AUG-13-1999
LEAD II
H/R 60BPM
25mm/S
HME LTD PAPER TYPE ZA0002
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What tests should I do in syncope?

- FBC, U&E, CRP (older people), glucose
- 12-lead ECG
- Patients may need investigating for postural hypotension…
- Do not do the following:
  - Troponin if no chest pain / ECG changes*
  - CT brain
  - Heart tests in people with normal hearts!

When to admit a patient with syncope

- Suspected or known significant heart disease
- ECG abnormalities suggesting an arrhythmia
- Syncope during exercise
- Syncope occurring in supine position... (unless obvious)
- Syncope causing severe injury
- Family history of sudden death
- Sudden onset palpitations in the absence of heart disease
- Frequent recurrent episodes..?
- Old and needs ‘sorting out’

Prognostic stratification

Poor prognosis

- Structural heart disease (independent of the cause of syncope)

Excellent prognosis

- Young, healthy, normal 12-lead ECG
- Neurally-mediated syncope
- Orthostatic hypotension
- Unexplained syncope after thorough evaluation

Treatment of non-cardiac syncope

- Patient education
- General measures …
- Reduce / stop exacerbating medication
- Medication for syncope
- Dual chamber PPM for certain patients (very rare!)

TLOC – single episode (DVLA June 2017)

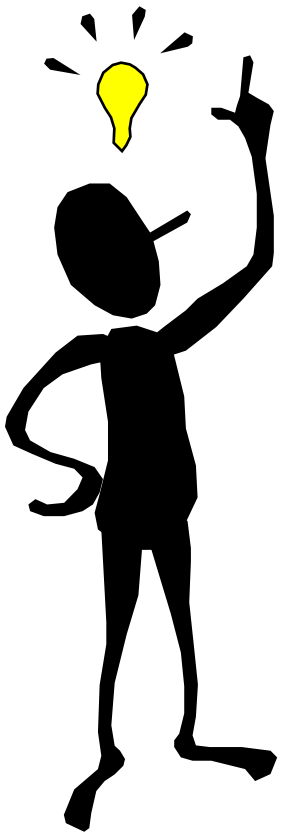
Disorder	***Group 1***	***Group 2 (bus, lorry) and taxi***
Typical VVS Standing Sitting	- Ok if avoidable trigger	Must not drive and must inform DVLA Must not drive 3 months and notify DVLA
Cough syncope	Cannot drive for 6 months unless 'cured'	Cannot drive for 5 years unless 'cured'
Unexplained syncope (any posture)	If no cause identified licence revoked 6 months	If no cause identified licence revoked 12 months
Cardiovascular syncope (any posture)	Can drive after 4 weeks if treated, otherwise 6 months	Can drive after 3 months if treated, otherwise 12 months
LOC with seizure markers	Cannot drive for 6 months, or 12 months if high risk of recurrence	Cannot drive for 5 years

TLOC – recurrent episodes (DVLA June 2017)

Disorder	***Group 1***	***Group 2 (bus, lorry) and taxi***
Typical VVS Standing Sitting	- Ok if avoidable trigger	Must not drive and must inform DVLA Must not drive (indefinite, pending investigations)
Cough syncope	Cannot drive for 12 months unless ‘cured’	Cannot drive for 5 years unless ‘cured’
Unexplained syncope (any posture)	If no cause identified licence revoked 12 months	If no cause identified licence revoked 10 years
Cardiovascular syncope (any posture)	Must not drive, possibly up to 12 months	Can drive after 3 months if treated, otherwise 12 months
LOC with seizure markers	Cannot drive for 6 months, or 12 months if high risk of recurrence	Cannot drive for 5 years

Summary

- Five collapse scenarios
- A bit about syncope
- European Society of Cardiology (ESC) guidelines on the evaluation and management of syncope
- Know the NICE guidelines on TLOC for your SCEs ☹
- And don’t forget driving advice!



Any questions?