Syncope: what is new and important to you since 2013?

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Outline

• New guidelines: What’s relevant to you?
• A new test
• An oldie that still has life in it
• Electrics
• New services that can help find and treat people with syncope
• The ideal service

• And a quiz along the way……
Guidelines
‘Ten Commandments’ of ESC Syncope Guidelines 2018

The new European Society of Cardiology (ESC) Clinical Practice Guidelines for the diagnosis and management of syncope were launched 19 March 2018 at EHRA 2018 in Barcelona.

The guidelines provide recommendations on how to prevent syncope and include the use for an implantable loop recorder in diagnosis of patients with unexplained falls, suspected epilepsy, or recurrent episodes of unexplained syncope and a low risk of sudden cardiac death (SCD).

The new pathway avoids costly hospitalizations while ensuring the patient is properly diagnosed and treated. A new section has been added to the guidelines, a addendum, with practical instructions for doctors on how to perform and interpret diagnostic tests.

The Task Force that prepared the guidelines was truly multidisciplinary. A minority of cardiologists were joined by experts in emergency medicine, internal medicine and physiology, neurology and autonomic diseases, gastroenterology, and nursing.

Diagnosis: initial evaluation

1. At the initial evaluation answer the following four key questions:
   • Was the event a transient loss of consciousness (TLOC)?
   • In case of TLOC is it of syncope or non-syncope origin?
   • In case of suspected syncope, is there a clear aetiological diagnosis?
   • Is there evidence to suggest a high risk of cardiovascular events or death?

2. At evaluation of TLOC in the emergency department (ED) answer the following three key questions:
   • Is there a serious underlying cause that can be identified?
   • If the cause is uncertain, what is the risk of a serious outcome?
   • Should the patient be admitted to hospital?

3. Perform immediate ECG monitoring (in bed or telemetry) in high-risk patients when there is a suspicion of arrhythmic syncope.

4. Perform carotid sinus massage (CSM) in patients >40 years of age with syncope of unknown origin compatible with a reflex mechanism.

5. Perform tilt testing if there is suspicion of syncope due to reflex or an orthostatic cause.

Diagnosis: subsequent investigations

6. Perform prolonged ECG monitoring (external or implantable) in patients with recurrent severe unexplained syncope who:
   • have clinical or ECG features suggesting arrhythmic syncope and
   • have a high probability of recurrence of syncope in a reasonable time and
   • may benefit with a specific therapy if a cause for syncope is found.

   - Perform electrophysiology studies (EPS) in patients with unexplained syncope and bifascicular BBB (impending high-degree AV block) or suspected tachycardia.

   - Consider video recording (at home or in hospital) of TLOC suspected of non-syncope nature.

Treatment

7. To all patients with reflex syncope and orthostatic hypotension (OH), explain the diagnosis, reassure, explain the risk of recurrence, and give advice on how to avoid triggers and situations.
These measures are the cornerstone of treatment and have a high impact in reducing the recurrence of syncope. In patients with OH, select one or more of the following additional specific treatments according to clinical severity:

- Education regarding lifestyle manoeuvres;
- Adequate hydration and salt intake;
- Discontinuation/reduction of hypotensive therapy;
- Counter-pressure manoeuvres;
- Abdominal binders and/or support stockings;
- Head-up tilt sleeping;
- Midodrine or fludrocortisone.

8. In patients with severe forms of reflex syncope, select one or more of the following additional specific treatments according to the clinical features:

- Midodrine or fludrocortisone in young patients with low BP phenotype;
- Counter-pressure manoeuvres (including tilt training if needed) in young patients with prodromes;
- Implantable loop recorder-guided management strategy in selected patients with or without short prodromes;
- Discontinue/reduction of hypotensive therapy targeting a systolic BP of 140 mmHg in old hypertensive patients;
- Pacemaker implantation in older patients with dominant cardioinhibitory forms.

9. Balance benefit and harm of an ICD implantation in patients with unexplained syncope at high risk of SCD [e.g., those affected by left ventricle systolic dysfunction, hypertrophic cardiomyopathy, arrhythmogenic right ventricular cardiomyopathy, or inheritable arrhythmogenic disorders]. In this situation, unexplained syncope is defined as syncope that does not meet any Class I diagnostic criterion defined in the tables of recommendations of the 2018 ESC Guidelines on syncope and is considered a suspected arrhythmic syncope.

10. Ensure that all patients with cardiac syncope receive the specific therapy for the culprit arrhythmia and/or the underlying disease.

   Re-evaluate the diagnostic process and consider alternative therapies if the above rules fail or are not applicable to an individual patient.

   Bear in mind that guidelines are only advisory. Even though they are based on the best available scientific evidence, treatment should be tailored to an individual patient’s need.

Michele Brignole MD ESC
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Conflict of interest: none declared.
**BBC Ceefax**

East Sport

ALL THE LATEST SPORT FROM YOUR AREA

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**Oracle**

ORACLE goes off the air 11/198

HAPPY NEW YEAR FROM ALL OF US

LIVE AT FIVE: ADVERTISING 270
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WHAT'S ON: COMMUNITY 340
ORACLE Closes at Midnight 198

CHECK THE 7 DAY FORECAST! PAGE 111
The Adenosine Test

- Long history – to early 1990’s
- Injectable adenosine intravenously, monitor heart rate, pause in heart rate of >6 seconds diagnostic…of…
  - Vasovagal, sinus node disease, heart block etc
- Some indications +ve test gives early diagnosis of need for permanent pacemaker in people with unexplained syncope
- However, contradictory evidence has led to adenosine testing being removed from latest iteration of ESC Syncope Guidelines
Adenosine testing to DEtermine the need for Pacing Therapy with the additional use of an Implantable Loop Recorder (ADEPT-ILR study) [Parry, Plummer, Matthews]

- Patients >40 years presenting to acute medical services or referred by GP with unexplained syncope
- Adenosine 20mg IV, double blind, placebo-controlled, cross-over randomised controlled trial
- **Adenosine test positive** patients, mean age 65 years, pacemaker implanted, then switched on/off for 6 months each
- **Adenosine test negative** patients: Implantable loop recorder
  - No previous attempt at this
ADEPT-ILR: What did we find?

- No problems with adenosine testing
- 5 people withdrew from the study
  - 4 with need for pacemaker, 1 wanting pacemaker out
- **Significant reduction in syncope in adenosine test positive patients when pacemaker turned on**
- In ILR group, only 1/27 patients needed pacemaker
- So…
  - Promise of quick, safe, 10 minute test to diagnose need for permanent pacemaker
  - Overview of all studies so far needed to guide further practice
Pulmonary embolism

- Long known to be a cause of syncope
- Exact numbers unknown
- Prandoni et al NEJM 2016 reported 17% (!) of those hospitalised for syncope had causal PE

Controversial:
- 102,531 cases in US – 0.17%
- 1,671,944 cases (Costantino et al 2018) 0.06-0.55% of all syncope

- …………so clearly nowhere near that high!
- Rare but important
- If short of breath, chest pain, sudden onset, newly swollen leg – make sure your medic thinks about it!
THINGS THAT MAKE YOU GO

HMMMMM...
things that make you go hmmmm...

C + C music factory

featuring Freedom Williams
Joseph Wilson Swan
1850
Electrics

- **Closed Loop Stimulation pacing in vasovagal syncope**
  - INVASY studies 2004, 2006
  - Effective in VVS where heart slows/pauses significantly (Palmisano et al Europace 2012, Russo Heart 2013)
  - **SPAIN study** (Baron Esquivias et al 2017)
    - 46 patients, 56 years old, 5+ episodes of syncope
    - Double blind placebo controlled cross over study
    - 50% reduction in syncopal episodes compared with placebo pacing
EXCITING NEW SERVICE
Proactive case finding in syncope: The North Tyneside Community Falls and Syncope Service
(Parry SW et al JAGS 2016)

- All guidelines rely on presentation to medical services
- Huge unmet need
- Idea to fill the gap
  - Enhance case finding
  - Preventive service provision
- Multi-agency falls prevention and syncope assessment service
Proactive case finding and syncope

- Screening of GP casenotes of all over 60s
- Risk factors:
  - Previous fall or blackout with secondary care attendance
  - Previous fragility fracture
  - 4 or more prescribed meds (psychoactive, antihypertensive)
  - Falls or blackouts recorded by GP
- Screening questionnaire sent to those identified
  - 76% response rate
- Invited to attend based on responses
Targeted specialist falls and syncope assessment in a community setting

- Medical assessment
  - History, examination, bone health risk assessment (FRAX)
  - Review of findings, education, counselling
- Band 2 HCA review
  - ECG, lying and standing blood pressure
  - Geriatric depression scale, MMSE, FES-I, visual acuity
- Senior physiotherapy assessment and treatment
- Recommendations to primary care
- Referrals to secondary care, Age UK strength and balance training classes, social services, physio
What did we find?

- 4039 seen over 4 years, 5 clinics/week
- 2510 (62%) female, mean/median 75 years
- 2423 (60%) *additional* diagnoses
# Table 1. New Diagnoses, Conditions, and Problems (N = 4,039)

<table>
<thead>
<tr>
<th>Diagnosis, Condition, Problem</th>
<th>n</th>
</tr>
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<tbody>
<tr>
<td>Gait disorder</td>
<td>2,232</td>
</tr>
<tr>
<td>Timed Up and Go Test score &gt; 14 seconds</td>
<td>1,217</td>
</tr>
<tr>
<td>Five times sit to stand test score &gt; 14 seconds</td>
<td>1,514</td>
</tr>
<tr>
<td>Abnormal gait speed (&gt;1 m/s)</td>
<td>975</td>
</tr>
<tr>
<td>Cognitive impairment (Mini-Mental State Examination score &lt; 24/30)</td>
<td>184</td>
</tr>
<tr>
<td>Depression (Geriatric Depression Scale score ≥ 10/15)</td>
<td>150</td>
</tr>
<tr>
<td>Fear of falling (Falls Efficacy Scale International score &gt; 23)</td>
<td>2,448</td>
</tr>
<tr>
<td>Medications requiring review and modification</td>
<td>190</td>
</tr>
<tr>
<td>Benign positional paroxysmal vertigo</td>
<td>173</td>
</tr>
<tr>
<td>Orthostatic hypotension</td>
<td>252</td>
</tr>
<tr>
<td>Vasovagal syncope</td>
<td>196</td>
</tr>
<tr>
<td>Cough syncope</td>
<td>13</td>
</tr>
<tr>
<td>Micturition syncope</td>
<td>3</td>
</tr>
<tr>
<td>Low blood pressure (&lt;100 mmHg systolic) requiring further review</td>
<td>123</td>
</tr>
<tr>
<td>New heart murmur requiring further investigation</td>
<td>157</td>
</tr>
<tr>
<td>New atrial fibrillation</td>
<td>50</td>
</tr>
<tr>
<td>Symptomatic bradycardia requiring further investigation</td>
<td>76</td>
</tr>
<tr>
<td>Asymptomatic bifascicular block flagged to individual and general practitioner</td>
<td>37</td>
</tr>
<tr>
<td>Electrocardiogram and symptoms requiring permanent pacing</td>
<td>13</td>
</tr>
<tr>
<td>Corrected visual acuity &gt; 6/18 requiring optician review</td>
<td>210</td>
</tr>
</tbody>
</table>

a Mean Falls Efficacy Scale International score 30.
Health economic analysis
QALY estimates

Non-elective admissions

420 day Kaplan-Meier survival curves

Reduced in mortality at 18 months

Survival: Treated (blue) and Control (red)

Cost of admissions

Number of admissions
Why a case finding approach is important......

<table>
<thead>
<tr>
<th></th>
<th>Patients seen</th>
<th>Number with falls self report (%)</th>
<th>Number with falls recorded by GP</th>
<th>GP % of self report falls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice A</td>
<td>349</td>
<td>242 (69)</td>
<td>58</td>
<td>24</td>
</tr>
<tr>
<td>Practice B</td>
<td>213</td>
<td>136 (64)</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Total</td>
<td>562</td>
<td>378 (67)</td>
<td>58</td>
<td>15</td>
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Slow medicine.....
Syncope Unit: rationale and requirement – the European Heart Rhythm Association position statement endorsed by the Heart Rhythm Society

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Table 1 Expected benefits of Syncope Unit

<table>
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<tr>
<th>Expected benefits</th>
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<tbody>
<tr>
<td>Specialist opinion for patients</td>
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<tr>
<td>Early accurate and efficient diagnosis</td>
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<tr>
<td>Timely treatment</td>
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<tr>
<td>Better application of recommended guidelines</td>
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<tr>
<td>Less duplication and fragmentation of services</td>
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<tr>
<td>Single source of communication for all stakeholders</td>
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<tr>
<td>Shorter length of stay for hospital inpatients</td>
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<tr>
<td>Reduction of total care costs</td>
</tr>
<tr>
<td>Better systems for monitoring and evaluation of practice at local, national, and international level</td>
</tr>
<tr>
<td>Better quality control at local, national and international level</td>
</tr>
<tr>
<td>Access to harmonized data across different hospitals</td>
</tr>
<tr>
<td>High quality, evidence-based data for research</td>
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<tr>
<td>Evidence-based innovation in diagnosis, treatments and healthcare model</td>
</tr>
</tbody>
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Consensus Statement 1—Structure of the EHRA SU

1. One or more physicians of any specialty who are syncope specialists. Owing to the multidisciplinary nature of T-LOC, each SU should identify specific specialists for SU and for consultations.
2. A team comprising professionals who will advance the care of syncope patients. These may be physicians, specialized/trained nurses, or others who bring multidisciplinary skills to the facility, coupled with administrative support. The roles played by members of the team may vary according to local circumstances and individual skill. Nurses may be expected to take very important roles including initial evaluation of patients, follow-up clinic assessments, selection of investigations including tilt testing and implantation/insertion of ECG loop recorders according to pre-defined protocols and local regulations.
3. Given that the SU is integrated within a hospital organization, syncope specialists, and staff are not necessarily employed full-time, but frequently have other duties depending on the volume of activity.
4. The SU should follow an internal protocol, which applies to diagnosis and management and is agreed by stakeholders.
5. An equipped facility must be available.
   - 12-Lead ECG and 3-lead ECG monitoring
   - Non-invasive beat-to-beat blood pressure monitor with recording facilities for subsequent analysis
   - Tilt table
   - Holter monitors
   - External loop recorders
   - Follow-up of implantable loop recorders*
   - 24-h blood pressure monitoring
   - Basic autonomic function tests
6. Established procedures for:
   - Echocardiography
   - Electrophysiological studies
   - Stress test
   - Neuroimaging tests
7. Specialist’s consultations (cardiology, neurology, internal medicine, geriatric, psychology), when needed
8. Therapy: Syncope patients will receive their therapy under the care of the SU unless expertise outside that of the SU is required.
9. Database management: The SU is required to keep medical records that should also include follow-up when appropriate. The database will also offer the possibility of collaborative research with other SUs.

*Implantation of loop recorders may be performed either by SU physicians or by external cardiologists upon request of the SU physicians.
Slow medicine.....