Syncope in the Elderly: Specific Diagnostic and Therapeutic Approach

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MY CONFLICTS OF INTEREST ARE: Consultant to Medtronic Medtronic Research Grant holder Speakers' Bureau St Jude Medical Shareholder in Boston Scientific

What is different about the Elderly? Not so much! But it is important to bear in mind: 1. Increasing incidence with advancing age 2. Increasingly severe causes 3. History may be coloured by amnesia 4. A fall may be syncope, 20% of falls are syncope 5. Some therapies will be more or less willingly undertaken in older patients

6. Discharge must take home situation into account including risks of further syncope/fall





Guidelines for the diagnosis and management of syncope (version 2009)

The Task Force for the Diagnosis and Management of Syncope of the European Society of Cardiology (ESC)

Developed in collaboration with, European Heart Rhythm Association (EHRA)¹, Heart Failure Association (HFA)², and Heart Rhythm Society (HRS)³

Endorsed by the following societies, European Society of Emergency Medicine (EuSEM)⁴, European Federation of Internal Medicine (EFIM)⁵, European Union Geriatric Medicine Society (EUGMS)⁴, American Geriatrics Society (AGS), European Neurological Society (ENS)⁷, European Federation of Autonomic Societies (EFAS)⁴, American Autonomic Society (AAS)⁹

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idelines European Heart Journal 2009;30:2631-2671

www.escardio.org/guidelines

ESC Guidelines still apply in elderly patients

Syncope is a symptom not a diagnosis

The symptom requires explanation/diagnosis

Initial evaluation

- The initial evaluation of a patient presenting with T-LOC consists of careful history, physical examination, including orthostatic BP measurements, and electrocardiogram (ECG).
- Based on these findings, additional examinations may be performed.



SYNCOPE Definition

Syncope is a transient loss of consciousness of rapid onset with or without warning, brief duration and usually quick and complete recovery, due to global cerebral hypoperfusion

Causes of Syncope



Unexplained Causes = Approximately 10%



High Short-term Risk Patients Requiring Hospital Admission

Structural Heart Disease AVBlock, Alternating BBB, Pauses >3s, Pre-excitation, Idio VT, LQTS, SQTS, Brugada ARVC Syncope during exercise or when supine Syncope causing Motor Vehicle accident or severe injury FH premature SCD Malfunctioning implanted cardiac device

ESC Guidelines Eur Heart J 2009; 30: 2631-2671 QuinnJV et al. SF Syncope rule. Ann Emerg Med 2004; 43: 224-232. Reed MJ et al. Rose study. J Am Coll Cardiol 2010; 55: 713-721. Constantino G et al. STePS. J Am Coll Cardiol 2008; 51: 276-283.

Intermediate Short-term Risk Patients: some of whom will require Admission

Two or more of the features listed below should prompt consideration of admission:

- Age >50yrs
- History of Structural Heart disease without obvious problem
- on presentation

Chronic Conduction tissue disease (LBBB, Bifasc B) Implanted Cardiac device without obvious malfunction Symptoms not consistent with Reflex syncope: cardiac syncope possible

ESC Guidelines Eur Heart J 2009; 30: 2631-2671.

Short-term Risk requiring hospitalisation

CCVS Structural heart disease Abnormal ECG (Brady, Tachy, Cond tissue dis, Old MI, New ischaemia Hypotension <90mmHg Age >60 yrs, Dyspnoea, Anaemia, Cerebro-vasc dis,FH SCD <50 yrs, Syncope supine or on ex or without prodrome

Sheldon R et al CCVS Position paper Can J Cardiol 2011; 27: 246-253.

Long-term Risk >1yr

Less is known about long-term risk in syncope patients concerning mortality and injury risks Present scoring systems have not been adequately tested No consensus exists Current systems offer shelter to the ED Physician resulting in higher than desirable admission rates

ESC Guidelines Eur Heart J 2009; 30: 2631-2671 Martin TP et al. Ann Emerg Med 1997; 29: 459-466. Colivicchi F et al. OESIL. Eur Heart J 2003; 24: 811-819. Disertori M et al. EGSYS 1. Europace 2003; 5: 283-291.

Risk Stratification

Important extension of the initial evaluation Difficult to put into action (Bartoletti) Major difficulty is that syncope overlaps so many different Medical disciplines including Cardiology,Emergency Medicine, Neurology, Internal Medicine, General Practice, Geriatrics, and Paediatrics. None reads the literature of any of the others

Possible Solutions: Set up an International Forum with all specialties represented and introduce Syncope Units.

Syncope Units

- These units provide convergence of expertise needed for Risk
- Stratification, Diagnosis and Management of Syncope Patients
- Virtual or Real
- Few exist except in Italy
- Evidence indicates that a quicker and more precise
- diagnosis is made
- Reduced admission rates and more appropriate investigation combine to improve healthcare delivery and reduce costs Structured evaluation methods including those computer based can readily be used

Disertori M et al (EGSYS 1) Europace 2003; 5: 283-291. Brignole M et al Europace 2010; 12: 109-118. Shen WK et al Circulation 2004; 110: 3636-3645. Youde J et al J Am Geriatr Soc 2000; 48: 783-787. Petkar S et al Clin Med 2011; 11: 11-16. Brignole M et al (EGSYS 2) Europace 2006; 8: 644-651.

Brignole M et al Eur Heart J 2006; 27: 76-82.

Diagnosis of the Cause of Syncope: Tilt-testing

Only reveals a hypotensive/vasodepressive tendency May confirm a diagnosis of VVS if previous episode is precisely reproduced (bear in mind amnesia) Some value in patient education Establishes patient confidence in the diagnosis Orthostatic hypotension (PPS) BUT not for assessing treatment efficacy

ESC Guidelines 2009 Eur Heart J 2009; 30: 2631-2671. NICE Clinical Guideline 109 08/2010. www.nice.org.uk/guidance/CG109

Sutton R, Brignole M Eur Heart J 2014; 35:2211-2212.

Therapy for Vasovagal Syncope

Increase fluid consumption (2 litres+/day?) Increase salt consumption (10g/day?) Counter-pressure manoeuvres (Buttocks) Reduce or cease hypotensives

Reduce caffeine consumption ?

DRUGS DO NOT WORK Favourable report on Fludrocortisone about to appear

Krediet P et al. Circulation 2002; 106: 1684-1698. Brignole M et al. J Am Coll Cardiol 2002; 40: 2054-2060. van Dijk N et al. PC Trial J Am Coll Cardiol 2006; 48: 1652-1657.

Therapy for Vasovagal Syncope

Midodrine has three favourable RCTs but the number of patients is small and follow-up not long

Urinary outflow problems prevent its use in older males

Short half-life implies 3-4 times daily usage predisposes to non-compliance Worldwide Administrative approval lacking

Ward CR et al. Heart 1998; 79: 45-49. Perez-Lugones A et al J Cardiovasc Electrophysiol 2001; 12: 935-938. US Food & Drug Admin. Midodrine Update. FDA-2010-N-0637.

Therapy for Vasovagal Syncope

Fludrocortisone Prevention of Syncope POST 2. Large RCT shows benefit for this drug but limited Previous work suggests that it is likely to require support from other drugs

Raj SR et al. POST 2 Design. Am Heart J 2006; 151: 1186.e11-7.

Therapy for Vasovagal Syncope Pacing VPS1, VASIS, SYDIT compared pacing (DDD with a form of rate hysteresis) with no therapy or Atenolol 100mg daily. All showed a highly significant benefit of pacing (time to 1st recurrence) VPS 2 & SYNPACE compared pacing as above with implanted device switched off. Neither trial showed benefit for active mode but small numbers, short followup and questionable patient selection.

Connolly SJ et al. VPS 1 J Am Coll Cardiol 1999; 33: 16-20. Sutton R et al. VASIS. Circulation 2000; 102: 294-299. Ammirati F et al. SYDIT Circulation 2001; 104: 52-57. Connolly SJ et al. VPS 2. JAMA 2003; 289: 2224-2229. Raviele A et al. SYNPACE. Eur Heart J 2004; 25: 1741-1748.

Therapy for Vasovagal Syncope

ISSUE 2 Registry addressed patient selection. ICM/ILR implanted to show spontaneous syncope associated with asystole/intense bradycardia Patients were followed by their referring physicians Half received pacemakers and half did not. The outcome in paced patients was significantly better (time to 1st recurrence and burden) Prompted ISSUE 3 RCT

Brignole M et al. ISSUE 2 Eur Heart J 2006; 27: 1085-1092. Sutton R et al ISSUE 3 Design. Europace 2007; 9: 25-30. Brignole M et al ISSUE 3. Circulation 2012; 125: 2566-2571.





Freedom from syncopal recurrence



Syncope recurrence after PM therapy according to tilt test results. RCT + Registry





Syncope recurrence after PM therapy according to tilt test response. RCT + Registry



Pacing in VVS : Summary

- Initial studies were not double-blind and not based on documented spontaneous bradycardia
- PM implantation may create psychological responses that modify autonomic responses
- Patient selection is crucial prompting ISSUE 2 Registry and ISSUE 3 RCT (+Registry)
- ISSUE-3 suggests that pacing therapy is effective if spontaneous bradycardia is documented
- ISSUE 3 RCT + Registry suggests that tilttesting can be used as risk stratification for syncope recurrence. (Similar findings in CSS)

Carotid Sinus Syndrome

Pacing is the established treatment in the cardioinhibitory type of this condition and is a Class 1 indication Level of Evidence B/C in all Guidelines

Tilt positive patients will do less well in terms of syncope recurrence

Conclusions

Vasovagal syncope is common in older patients but may be atypical in presentation. Remember amnesia & falls Cardiac syncope is more common than in young **Risk Stratification is mandatory but difficult** Assessment process is best in close cooperation with a **Syncope Clinic** Indications for pacing in reflex syncope have become more clear. Tilt testing offers risk stratification for recurrences **Discharge home must take all factors into consideration** including risks of further syncope/fall