How well are European Society of Cardiology (ESC) guidelines adhered to in patients with syncope?

C DDever, O Hade, CW Fan, C Cunningham, RA Kenny
Falls & Blackout Unit, St James’s Hospital, James’s St, Dublin 8

Abstract
The ESC guidelines on syncope were published in 2001 and updated in 2004. Adherence to the recommendations enables early stratification of low and high risk patients and prevents unnecessary investigations and admissions. Vasovagal syncope (VVS) is the commonest cause of syncope in all age groups and a low risk condition. The study objective was to determine whether the ESC guidelines were adhered to prior to referral to a syncope unit. 100 consecutive patients with unexplained syncope (52 [23 - 15 (91)] years) were 53 female. Sixty-six patients had VVS. Forty-nine (79%) of patients with VVS had undergone unnecessary investigations prior to diagnosis and 31 (47%) were admitted to hospital for investigation. Research from other countries confirms that adherence to the ESC guidelines expedites accurate diagnosis, improves resource utilization and reduces health care cost. Greater awareness amongst Irish practitioners of guidelines may improve syncope management and reduce costs.

Introduction
Syncope is a common disorder with 40% of the population expected to experience at least one episode in their lifetime. Syncope accounts for up to 6% of acute medical admissions and 3% of Accident & Emergency (A&E) consultations. The ESC guidelines were first published in 2001 with subsequent revision in 2004. Objective of the guidelines is to inform practitioners of the recommended investigative pathway for syncope, based on evidence and best practice. Application of the guidelines in out-patient units and A&E departments improves diagnostic rates, obviates unnecessary investigation, health care costs and hospital admission rates. Those

The commonest cause of syncope is Vasovagal syncope (VVS). For the majority, VVS is a benign condition causing loss of consciousness with spontaneous recovery. Many individuals will have prodromal symptoms prior to blackout. A timelaid peak in incidence occurs during younger years and in those over 70 years of age presenting with one episode and no evidence of structural heart disease can be reassured. For recurrent episodes, outpatient assessment for low risk cases is recommended and hospital admission only if high risk (cardiac event/arrhythmia suspected cause). A dedicated syncope unit was established in 2005 at St James’s Hospital, Dublin. The model was a rapid access, one site one stop day case facility. An Integrated approach was established for referrals from A&E and for inpatients. The study objective was to determine whether the ESC guidelines were adhered to in Ireland. We evaluated investigations, hospitalizations and costs of investigations carried out for patients with syncope, prior to referral to the syncope service.

Methods
Details from 100 consecutive patients presenting with a clear history of syncope were analysed. Syncope was defined as per ESC guidelines as a transient self-limited loss of consciousness, leading to falling. The onset being relatively sudden with rapid return to consciousness and spontaneous recovery. Onset of previous syncope was usually preceded by warning symptoms and the subsequent recovery spontaneous. Detailed history and physical examination were usually part of all previous investigations relevant to syncope were obtained from hospital and primary care. The diagnostic pathway was carried out for all patients. The cost of investigations was calculated for the public health care service, and where unavailable V.H.I. (Voluntary Health Insurance) costing was used.

The initial assessments carried out at the syncope unit were as per ESC guideline recommendations. In the first instance all referrals had a detailed history and physical examination, surface Electrocardiogram (ECG), and Orthostatic Blood pressure measurements (Figure 1). If the diagnosis was evident from initial evaluation, no further tests were required. If after the initial evaluation a cardiac cause was suspected, further cardiac investigations such as stress test, echocardiogram, electrophysiological studies and coronary angiogram, internal or external loop monitoring were carried out. If a neurally-mediated diagnosis was suspected a Carotid sinus massage (CSM) (supine and upright positions) and Head-up-tilt (HUT) table test were performed (Table 1), followed by an intravenous loop recorder if diagnosis remained unclear. Routine blood tests were performed only if indicated. Where possible, investigations were carried out on the first day of attendance. All necessary equipment is available at the syncope facility to enable as comprehensive assessment as possible during the initial visit.

Figure 1: Evaluation of Syncope Task Force on Syncope ESC Guidelines 2004

Results
One hundred patients were analysed. Twenty-seven were referred by the General Practitioner (GP), 55 by consultant physicians, and 18 from A&E. Mean age of patients was 52+23 (15-91) years. Fifty-three patients were female; 35 were over 65 years of age. Forty-eight patients had symptoms for longer than one year; 61 had between 2-9 episodes in a lifetime and 15 had in excess of 20 episodes. Syncope was unexplained at time of referral in all. A diagnosis was achieved in 98 patients; in 43 this was made on the first day of attendance. The most common attributable cause was VVS (86); 16 patients had OH, 3 CES, 3 epilepsy, 1 psychogenic, and 1 cardiac arrhythmia. In 4 syncope remained unexplained. Ten patients with VVS also had OH and 4 had CSS. If more than one condition was present, the primary diagnosis was attributed to full symptom reproduction during specific tests.

Discussion
The majority of patients referred with unexplained syncope had neurally-mediated syncope either VVS or OH and CSS. These findings are consistent with diagnoses from other countries. At variance with other practices is the high number of unnecessary investigations carried out before diagnosis and the high proportion of syncope patients, in particular with VVS, who were admitted to hospital for investigation. These observations indicate lack of adherence to the ESC guidelines amongst practitioners in Ireland. Figure 1 demonstrates the recommended diagnostic pathways for VVS. VVS is a condition which is for the majority is benign. In many a diagnosis is achieved by history alone. If history is not diagnostic, or injury has occurred, or symptom reproduction is required, HUT table test is recommended, particularly in older adults in whom history is not reliable. The study confirms over investigation and unnecessary costs incurred in making diagnosis, particularly in younger patients before assessment in the syncope clinic. At the syncope unit a diagnosis was made in almost all referrals (96%); the...
attributable diagnosis was made at the initial visit in 43%; these data are consistent with previous reports, when ESC guidelines are applied. Before applying the guidelines it is important to clarify that the patient is experiencing syncope rather than other symptoms which mimic syncope such as epilepsy, drop attack, falls, hypoglycaemia etc.

Syncope is clearly defined as a transient self-limited loss of consciousness, leading to falling, the onset being relatively rapid and the subsequent recovery spontaneous, complete and usually prompt. The guidelines recommend that, in the first instance, patients with syncope should have a detailed history and examination followed by ECG and lying and standing blood pressure. In patients over 50, this initial assessment should include carotid sinus massage using phasic BP and heart rate monitoring in supine and upright positions. If a cardiac aetiology is suspected at this stage, cardiac investigations such as exercise stress testing, echocardiography and electrophysiological studies are warranted. If a neurally-mediated diagnosis is suspected or if cardiac investigations are not diagnostic, then HUT, repeat CSM, active standing and ambulatory monitoring of BP and external or internal loop monitoring is indicated. Should syncope remain unexplained the history should be re evaluated and other investigations then considered.

Because it is difficult to evaluate the appropriateness of investigations or hospital admissions in patients with cardiac syncope, we confined these analyses to patients with VVS. 47% of patients with VVS had been admitted for investigation of syncope; the cost of admissions accounted for 75% of health care cost prior to assessment in the syncope unit. The main investigation which was considered inappropriate was neuro imaging; 56 CT/MRI scans in VVS patients. While centres in other countries have published on inappropriate investigations and resource utilisation in the setting of vasovagal syncope, this is the first such publication in Ireland demonstrating poor adherence to guidelines and excessive and inappropriate investigation and costs for benign vasovagal syncope.

Correspondence: C O’Dwyer
Falls & Blackout Unit, St James’s Hospital, James’s St, Dublin 8
Email: odwyercl@tcd.ie

References
5. Farwell DJ, Sulke AN. Does the use of a syncope diagnostic protocol improve the investigation and management of syncope? Heart January 1, 2004;90:52-58.

Comments: <br>