

A survey of the management of transient loss of consciousness in the emergency department

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ABSTRACT

Background: Transient loss of consciousness (TLoC) is a common presentation to the emergency department (ED). We sought to evaluate current practice in the management of patients with TLoC presenting to a large, city centre ED, against national standards.

Methods: The ED admissions database was searched to identify all patients attending with TLoC during October 2012. The clinical record of the attendance was reviewed to determine if the initial assessment met national standards.

Results: Ninety-one patients had a primary presentation with TLoC, representing 0.95% of ED attendances. Documentation of before/during/after the clinical event and clinical examination were done well. Notable aspects done less well included lying and standing blood pressure and recording of driving status. No patient was discharged from the ED with a copy of their 12-lead electrocardiogram (ECG). Sixty-five patients (71%) were discharged from the ED, with follow-up arranged for 11 (16%). Additional follow-up would have been appropriate in a further 15 cases (28%).

Conclusion: Several aspects of the initial assessment of TLoC were done well. Areas for improvement include driving status documentation and advice, recording of postural blood pressures and ECG provision on discharge.

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INTRODUCTION

Transient loss of consciousness (TLoC) is defined as a short-lived, self-limiting loss of consciousness with spontaneous recovery to normal. Most commonly, TLoC is secondary to a cardiovascular or neurally-mediated disorder resulting in transient global cerebral hypoperfusion, where the specific term ‘syncope’ is used; it is also secondary to a neurological condition, principally epilepsy. The burden of TLoC presenting as an emergency is significant – in the UK in 2005–6 there were 103,825 completed clinical episodes of syncope and collapse, of which 80% presented as an emergency; there were 50,112 completed clinical episodes of epilepsy in a similar time frame.¹ In contemporary series from Europe and the USA, syncope accounts for between 0.6%–1.4%, and epilepsy 1%⁷ of presentations to the emergency department (ED).^{2–6}

In 2010, the National Institute for Health and Care Excellence (NICE) in the UK published a clinical guideline (CG 109) for the initial assessment and diagnosis of TLoC and onward referral of patients.¹ The document contains a single point of reference for practicing clinicians that is condition-specific and without specialty bias, and aims to facilitate a quick, efficient and cost-effective diagnostic pathway.

At our institution, designated pathways exist for the onward referral of those patients presenting with suspected epilepsy (neurology) and syncope (falls and syncope service). However, the referral volume for syncope is low, with a mean referral rate of 17 patients per month with either syncope or falls in 2012–13. To evaluate current practice against national standards (NICE CG 109) we undertook a survey of the management of patients with TLoC presenting to our ED.

METHODS AND DEFINITIONS

The ED admissions database was searched to identify all attendances during October 2012 with one of the following presentations: syncope; vasovagal; faint; collapse; collapse of unknown cause; epilepsy; fit; or seizure. The clinical record of ED attendances and any subsequent inpatient episodes of all those fitting these criteria were reviewed by two clinicians (IM and JL). Those with TLoC, defined as ‘spontaneous self-limiting loss of consciousness with complete recovery to normal’ were identified, and the initial assessment, diagnosis and onward referral decision for each presentation was assessed using NICE CG 109 as the standard of practice. An adapted version of the template data collection tool produced in NICE

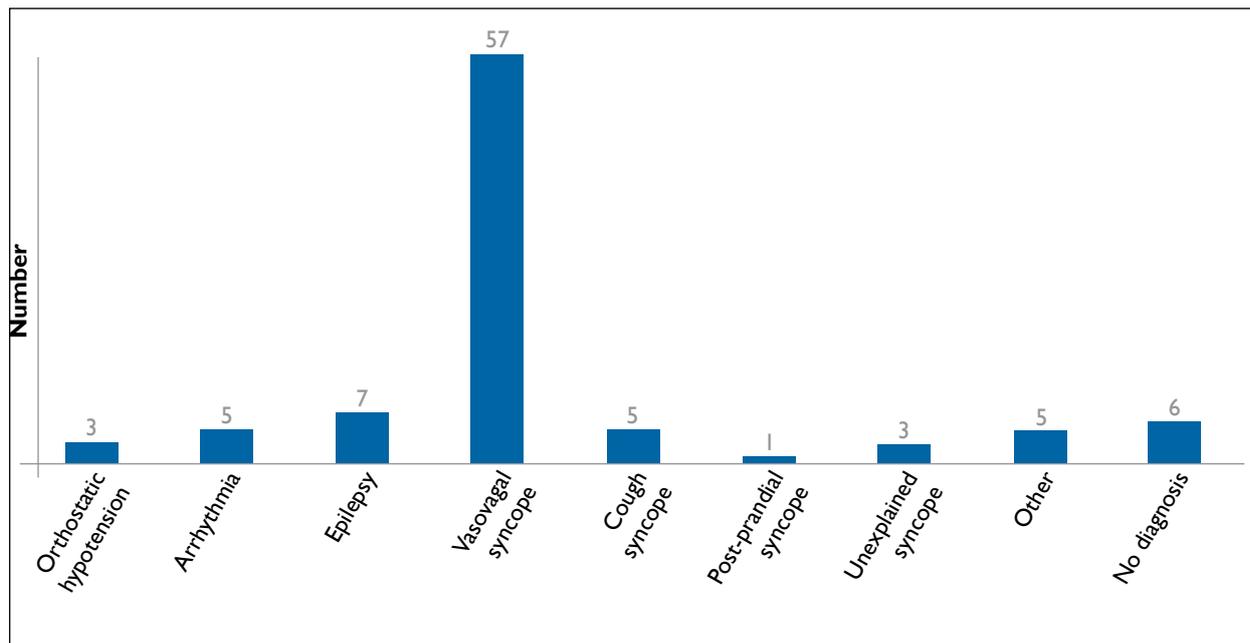


FIGURE 1 Breakdown of diagnosis on discharge from emergency department

CG 109 was used to collect data. Those with a presentation not compatible with TLoC and those with an established diagnosis to account for TLoC (e.g. known epilepsy) were excluded.

Documentation of the initial clinical history and assessment was reviewed to determine if all areas of clinical questioning and examination as described in the clinical guideline were recorded. For example, was a 12-lead electrocardiogram (ECG) report documented by the assessing ED doctor, were postural blood pressure values recorded?

The ED discharge diagnosis, either to home or to a hospital admission to the medical assessment suite was categorised using the following definitions:

Arrhythmia

Evidence of bradycardia or tachycardia sufficient to merit specific therapy on 12-lead ECG or ambulatory telemetry; or evidence of conducting system disease on 12-lead ECG insufficient to merit therapy but in the context of a strong clinical suspicion of arrhythmia.

Neurally-mediated syncope

Typical history of situational/reflex syncope or a compatible clinical history incorporating the '3 Ps' – provoking factors, upright posture and clinical prodrome.

Orthostatic hypotension

Drop of 20 mmHg in the systolic blood pressure or 10 mmHg in the diastolic blood pressure within three minutes of standing.

Post-prandial syncope

Syncope within 120 minutes after eating a meal in the absence of another clear cause.

Cough syncope

Syncope during or immediately following a bout of coughing.

Epilepsy

Witnessed description of a tonic-clonic seizure or, in the absence of a witness, the presence of two or more of the following features: a bitten tongue, head-turning to one side during TLoC; no memory of abnormal behaviour surrounding event; unusual posturing; prolonged limb-jerking; confusion following the event; or prodromal *deja vu* or *jamais vu*.

Unexplained syncope

None of the other previously outlined diagnosis could be attributed.

No diagnosis

No diagnosis was offered by the attending ED doctor.

RESULTS

There were 9,759 attendances at the ED by patients over 16 years of age in October 2012. Two hundred and fifty-seven were coded on discharge or admission to hospital as syncope; vasovagal; faint; collapse; collapse of unknown cause; epilepsy; fit; or seizure. Seventeen (7%) left the ED prior to seeing a doctor. The clinical records of the episode were unable to be located for 21 patients (8%); leaving 219 records to be analysed. Ninety-one patients

had a primary presentation with TLoC, representing 0.95% of all ED attendances over the age of 16 years.

The mean age at presentation was 51 ± 24 years with peaks around age 20 years, age 60 years and age 80 years. Fifty-six (62%) were female. The breakdown of diagnoses is shown in Figure 1. The most common diagnosis was neurally-mediated syncope ($n=56$, 62%). Epilepsy accounted for a small proportion of attendances ($n=7$, 8%). There were a small number with an arrhythmia ($n=5$, 5%); situational syncope, either cough or post-prandial ($n=6$, 6%); orthostatic hypotension ($n=3$, 3%); and unexplained syncope ($n=3$, 3%). No diagnosis was offered in six patients (7%).

Table 1 shows the performance of the initial assessment, incorporating history-taking and clinical examination, against NICE CG 109 standards. Aspects of the initial assessment that were done well included history-taking of the clinical event (84% documented the entirety of the events as recalled by the patient and 76% recorded the detailed circumstances) and the clinical examination (93% vital signs completed, 97% cardiovascular examination completed, 93% neurological examination completed, and 12-lead ECG done in 86%). Aspects which were less well documented included history of previous TLoC (25%), lying and standing blood pressure (24%), recording of driving status (4%) and family history (only 3% documented the presence or absence of a family history of sudden cardiac death < 50 years). No patient discharged from the ED was documented as having been provided with a copy of their 12-lead ECG.

Twenty-six patients (29%) were admitted from the ED at the discretion of the attending clinician. The most common diagnoses on admission were neurally-mediated syncope in 11 (42%), unexplained syncope in seven (27%) and arrhythmia in four (15%). Sixty-five patients (71%) were discharged from the ED. Follow-up was arranged in 11 (16%), the majority of which (six cases, 55%) was for the neurology first fit clinic. The two clinicians undertaking the clinical record review judged that follow-up would have been appropriate in an additional 15 of 54 cases discharged without this (28%). Reasons for further follow-up were: recurrent neurally-mediated syncope ($n=4$); demonstrable orthostatic hypotension ($n=3$); conducting system disease on 12-lead ECG ($n=4$); clinical suspicion of epilepsy ($n=2$); unheralded syncope and syncope while sitting ($n=1$ each).

DISCUSSION

This paper provides data on the contemporary management of TLoC in a large, city centre ED. Transient loss of consciousness accounted for 0.95% of all ED attendances, supporting the consistent figure of around 1% in the published literature.²⁻⁷ The dominant presentation was neurally-mediated syncope.

TABLE 1 Performance of different aspects of history taking and initial clinical assessment against NICE CG019 standard

Parameter	Performed (%)
History	
Entirety of history	76 (84%)
Witness present*	20 (22%)
Circumstances of TLoC	69 (76%)
Posture	55 (60%)
Prodrome	72 (79%)
Appearance during TLoC†	10 (50%)
Limb-jerking during TLoC†	11 (55%)
Tongue biting	73 (80%)
Injury	61 (67%)
Duration of TLoC	55 (60%)
Confusion post-TLoC	37 (41%)
Limb weakness post-TLoC	4 (4%)
Previous episodes	23 (25%)
Family history of SCD <50 years	3 (3%)
Culprit medication	69 (76%)
Driving status documented	4 (4%)
Initial assessment	
Vital signs	85 (93%)
Lying and standing blood pressure	22 (24%)
Cardiovascular examination	88 (97%)
Neurological examination	84 (92%)
12-lead ECG	78 (86%)
Reporting of 12-lead ECG‡	73 (94%)
Copy of 12-lead ECG#	0 (0%)
<p>TLoC= transient loss of consciousness; SCD= sudden cardiac death; ECG= electrocardiogram. *Witness present and attempt made to contact witness †Only applicable when a witness present ‡Only applicable when ECG performed #Only applicable in those discharged from ED.</p>	

Unexplained syncope accounted for only 3% of presentations, considerably fewer than rates of 14–54% in published series.^{4,5,8-11} Only 29% of attendances were admitted, fewer than rates of 46–76% in published series.^{4,9,10-12} This may reflect the presence of dedicated TLoC-specific educational content provided in the ED to embed key principles of diagnosis and onward referral pathways for both syncope and epilepsy. The presence of an adjacent established syncope service is likely to result in a trickle-down effect regarding TLoC awareness. Availability of a dedicated syncope service has previously been shown to be associated with reduced length of inpatient stay for patients with syncope compared with similar hospitals.¹²

Areas for service improvement compared with NICE CG 109 standards include documentation of driving

status, measurement of postural blood pressure, providing copies of the 12-lead ECG on discharge and improving onward referral. Possible solutions include mandatory documentation of driving status on registration in the department; mandatory postural blood pressure measurements on all those presenting with a fall or collapse regardless of reported loss of consciousness; establishment of departmental policy to provide patients with an additional copy of the 12-lead ECG regardless of diagnosis; improved awareness of the dedicated onward referral pathways for patients with epilepsy and syncope in the form of visual aids in the department or the initiation of a 'flagging' system on the departmental database at the conclusion of the clinical episode.

LIMITATIONS

Data collection was not complete, incorporating as it did, 92% of clinical records. However, we believe that the data give an accurate reflection of the clinical picture. We did

not include presentations with traumatic injuries that might have been secondary to TLoC e.g. femoral or humeral fractures and therefore we may have missed some presentations. This was a retrospective review of clinical records, as such it is possible that a particular question or examination to guide management was completed but not documented.

CONCLUSIONS

Syncope remains common, accounting for 1% of ED attendances. The NICE CG109 guideline provides a comprehensive ready-made standard to guide and review clinical practice. While history and examination documentation was generally complete, we identified several areas for improvement and potential solutions to address this, particularly in relation to discharge and follow-up pathways, driving status documentation and advice, recording of postural blood pressures and patient ECG provision.

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