

The Management of Transient Loss of Consciousness (TLOC) in Adults and Young Adults

Dr Thirunavukarasu S; Dr Poulson M

July 2014

Volume 6

Issue 1

Doctors Academy Publications

Transient loss of consciousness (TLOC) is defined by the NICE guidelines as an episode of spontaneous loss of consciousness with complete recovery, with no residual neurological deficit. It is a common presenting complaint in the Emergency Department and its management is complex and often time consuming.





**DOCTORS
ACADEMY**
Disseminating Medical Knowledge and Skills Globally

ISSN 2052-1715



WJMER

World Journal of Medical Education and Research

An Official Publication of the Education and Research Division of Doctors Academy



- Systematic Literature Review: Do Socio-economic Barriers Exist in British Medical School Admissions?
- An Argument to Integrate Social Media into Professionalism Training in Undergraduate Medical Education
- How Can the Efficacy of Acupuncture be Assessed in Improving Chronic Pain?
- I Sing the Body Electric: a Historical Perspective of Cardiopulmonary Resuscitation

What do nurses expect from newly qualified doctors?

The Management of Transient Loss of Consciousness (TLOC) in Adults and Young Adults

Training in cosmetic and reconstructive gynaecology

Basic Principles of Electrosurgery and Energized Dissection: Monopolar, Bipolar and beyond

A qualitative evaluation study on the perception and operation of Deprivation of Liberty Safeguards in Old Age Psychiatry teams in Rhondda Cynon Taff and Bridgend in Mid Glamorgan, South Wales

Introduction

The World Journal of Medical Education and Research (WJMERE) (ISSN 2052-1715) is an online publication of the Doctors Academy Group of Educational Establishments. Published on a quarterly basis, the aim of the journal is to promote academia and research amongst members of the multi-disciplinary healthcare team including doctors, dentists, scientists, and students of these specialties from around the world. The principal objective of this journal is to encourage the aforementioned, from developing countries in particular, to publish their work. The journal intends to promote the healthy transfer of knowledge, opinions and expertise between those who have the benefit of cutting edge technology and those who need to innovate within their resource constraints. It is our hope that this will help to develop medical knowledge and to provide optimal clinical care in different settings. We envisage an incessant stream of information flowing along the channels that WJMERE will create and that a surfeit of ideas will be gleaned from this process. We look forward to sharing these experiences with our readers in our editions. We are honoured to welcome you to WJMERE.

Editorial Board

Executive Committee

Editor-in-Chief

Professor Stuart Enoch, PhD, MBBS, MRCSEd, PGCert (Med Sci), MRCS (Eng)

Editor

Ms. Karen Au-Yeung, BSc, MBCh (Hons), MRCS

Associate Editors

Dr. Ahmed Hankir, MBChB

Ms. Laura Derbyshire, MBChB, MRCS

Advisory Board

Dr. Mohammed Hankir, BSc, MSc, PhD

Mr. Rajive Jose, MBBS, MS (Gen Surg), MCh (Plast Surg), DNB (Gen Surg), FRCSEd, Dip Hand Surgery (BSSH), FRCS (Plast Surg)

Dr. Suzanne Kumar, MBCh (Hons), MRCP

Mr. Sri Thrumurthy, MBChB (Hons), MRCS

Dr. Jamil David, BDS, MSc, PhD

Dr. Bina Raju, BDS, MSc, PhD

Mr. Vaikunthan Rajaratnam, MBBS (Mal), AM (Mal), FRCS (Ed), FRCS (Glasg), FICS (USA), MBA, Dip Hand Surgery (Eur), PG Cert MedEd (Dundee), FHEA(UK)

Dr. Charlotte Li, MSc, MB ChB

Dr. Leslie Cheng, MSc, MB ChB

Dr. Mayura Damanhuri, MBChB (Hons)

ALL RIGHTS RESERVED

Volume 6, Issue 1, 2014, World Journal of Medical Education and Research (WJMERE). An Official Publication of the Education and Research Division of Doctors Academy Group of Educational Establishments.

Electronic version

Doctors Academy, PO Box 4283,

published at

: Cardiff, CF14 8GN, United Kingdom

Print version printed

: Abbey Bookbinding and Print Co.,

and published at

: Unit 3, Gabalfa Workshops, Clos

Menter, Cardiff CF14 3AY

ISBN

: 978-93-80573-35-9

Designing and Setting

: Doctors Academy, DA House, Judges Paradise, Kaimanam,

Trivandrum, 695018, Kerala, India

Cover page design and graphics

: Sreekanth S.S

Type Setting

: Lakshmi Sreekanth

Contact

: wjmer@doctorsacademy.org.uk

Copyright: This journal is copyrighted to the Doctors Academy Group of Educational Establishments. Users are not allowed to modify, edit or amend the contents of this journal. No part of this journal should be copied or reproduced, electronically or in hard version, or be used for electronic presentation or publication without prior explicit written permission of the editorial and executive board of WJMERE. You may contact us at: wjmer@doctorsacademy.org.uk

The Management of Transient Loss of Consciousness (TLOC) in Adults and Young Adults

Dr Sharmaine Thirunavukarasu MbchB, MRCP UK
Core Medical Trainee
Royal Liverpool University Hospital

Dr Michelle Poulson (MBChB)
Core Medical Trainee
Royal Liverpool University Hospital

Address for Correspondence:
Dr Sharmaine Thiru: sharmainethiru@gmail.com

Keywords:

Transient loss of consciousness, Syncope clinic referral form, Collapse, Syncope, Blackout

Abstract

Transient loss of consciousness (TLOC) is defined by the NICE guidelines as an episode of spontaneous loss of consciousness with complete recovery, with no residual neurological deficit. It is a common presenting complaint in the Emergency Department and its management is complex and often time consuming. Aim: The aim of this retrospective audit is to measure the current practice in the Royal Liverpool Hospital (RLH) with the management and referral of patients attending with a history of TLOC and to assess the impact of the Syncope Clinic referral form (appendix 1) on the previous practice. The audit compared the pre-intervention practice in the ED and the post-intervention practice, with the current NICE TLOC standards used for risk stratification and follow up. Methods: 30 patients were selected by reviewing their casualty cards with the inclusion/exclusion criteria. The Emergency Department System (EDMS) was accessed and the NICE audit tool (appendix 2) used to collect the data from the casualty cards. Two to three months after the intervention, the same methods were used to select a further 30 patients. Results: The complex results post intervention shows a worsening in all areas, with the exception of Syncope Clinic as there were no patients identified in the intermediate risk group for comparison. Conclusions: The results post-intervention identify the need for a full initial assessment that should be emphasized to doctors in acute settings along with mandatory ECG. A proforma needs to be implemented into the ED and AMAU for accurate streamlining and risk stratification of patients with TLOC that will lead the user towards the appropriate method of disposal. Interdepartmental teaching on the new proforma and on the NICE TLOC guidelines should be carried out. This should then be followed by a re-audit.

Introduction

Transient loss of consciousness (TLOC) is defined by the NICE guidelines as a spontaneous loss of consciousness with complete recovery; no neurological deficit. It is a common condition and is likely to affect as many as half the population at one time or another. Thus it is a common presenting complaint in the Emergency Department and an appropriate decision is then needed as to the cause and the most optimal management plan, either discharge, admit or refer to an outpatient clinic. Its management is complex and often time consuming. Incorrect disposal of patients could prove dangerous if high risk symptoms were not acted upon or expensive when low risk patients are admitted unnecessarily.

There are a variety of causes for TLOC including cardiovascular, being the most common and neurological and psychogenic conditions. Evidence gathered by NICE suggests that patients are often incorrectly referred; patients treated for epilepsy and sent to a neurologist who then go on to have an abnormal ECG and a cardiac cause of TLOC. It is relevant to the diagnosis and management of patients regarding the circumstances of the TLOC and a detailed history is imperative as is a thorough examination. People will use various terminologies to describe the TLOC such as blackout, pass out, fainting or collapsing, collapsing may occur though without loss of consciousness.

The syncope referral form (appendix 1) used as the intervention in this audit uses the NICE risk symptoms to stratify patients into High risk - with red flag symptoms requiring admission and cardiology review within 24hrs, intermediate risk - true TLOC with no red flag signs for syncope clinic referral and similarly, low risk patients who

could be safely discharged to their GP. Although this is called Syncope clinic it does actually assess all levels of risk, to prevent inappropriate referrals of high or low risk patients to Syncope Clinic.

Aim/Objective

The aim of this audit is to measure the current practice in the Royal Liverpool Hospital with the management and referral of patients attending with a history of TLOC and to assess the impact of the Syncope Clinic referral form on the previous practice. The audit compared the pre intervention practice in the ED and the post intervention practice, with the current NICE TLOC standards for risk stratification and follow up. A target of 100% compliance would be the goal expected.

This audit could improve patient care and the patient journey through appropriate referrals, which could lead to less inappropriate admissions and less re-admissions. Some patients could be followed up safely as outpatients in specialists clinics, led by the Cardiologists or by their GPs. This could lead to cost savings, with fewer beds taken unnecessarily in the hospital.

Method

A retrospective audit was carried out. The audit department used the following phrases when searching the Emergency Department database, collapse, syncope, TLOC, loss of consciousness and blackout. Thirty patients (agreed number with the audit department) were selected by reviewing their casualty cards with the

inclusion/exclusion criteria. Two to three months after the intervention, the same methods were used to select a further thirty patients.

Inclusion Criteria:

- Documented history of true loss of consciousness

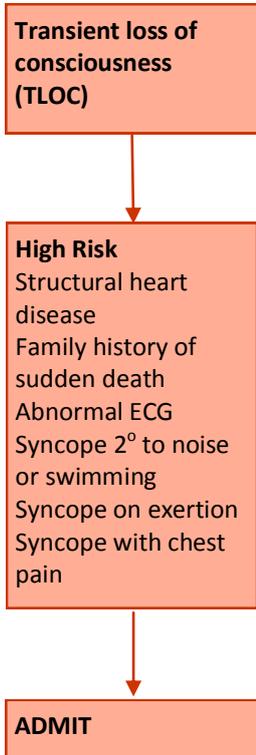
Exclusion Criteria:

- Patients who were known to have seizures
- Patients with a history of alcohol consumption prior to the collapse
- Patients known to have alcohol related seizures
- Patients who already had a prior diagnosis
- Patients with prolonged loss of consciousness/coma
- Patients without loss of consciousness
- Patients under 16 years old
- Patients with sustained loss on consciousness after head injury

We used the NICE audit tool to collect the data from the casualty cards using the EDMS system. The audit tool is designed to gather information about the questions asked of patients and their witnesses about the events pre and posts episode of TLOC; medications, their general health, family history, social history, a witness history as of premium importance. The full history with the examination is referred to as the diagnostic pathway. This then goes on to denote the route of disposal of the patient; high risk should be admitted and cardiology review within 24hrs, intermediate risk for syncope clinic or low risk for discharge, forming the crux of this audit.

Results

High Risk Patients



High Risk – Pre Intervention						
	High Risk	Admitted	Seen by CV<24hrs	Appt Given	D/C had prior appt	D/C no F/U
Patient Numbers	16	12	9	1 CV 1 Dr Diack	2 with CV	0
No ECG	1*	0	0	0	CV	0

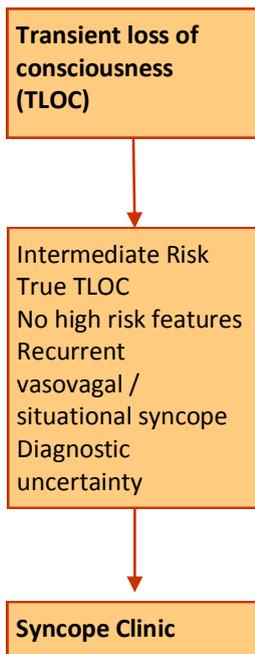
*Awaiting loop recorder

High Risk – Post Intervention						
	High Risk	Admitted	Seen by CV<24hrs	Appt Given	D/C had prior appt	D/C no F/U
Patient Numbers	11	6 to med-ics 1 to OBS	3	0	1 PPM check	4 1 from OBS
No ECG	1*	0	0	0	0	GP to F/U

* TLOC on exertion

Table 1: No. of patients in the high risk category and subsequent routes of disposal

Intermediate Risk Patients



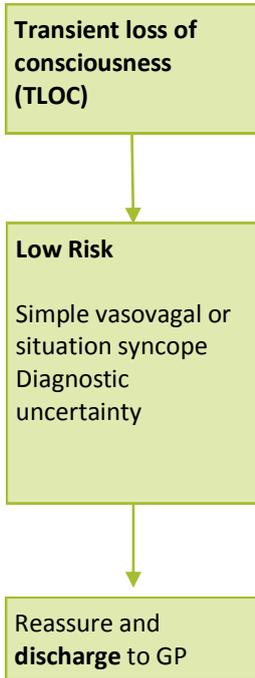
Intermediate Risk – Pre Intervention				
	Intermediate Risk	Syncope Clinic Referral	D/C CV Appt Al-ready	D/C no F/U
Patient Numbers	3	1	1	1*

*Ambiguous as no diagnosis

Intermediate Risk – Post Intervention				
	Intermediate Risk	Syncope Clinic Referral	D/C CV Appt Al-ready	D/C no F/U
Patient Numbers	0	0	0	0

Table 2: No. of patients in the intermediate risk category and subsequent routes of disposal

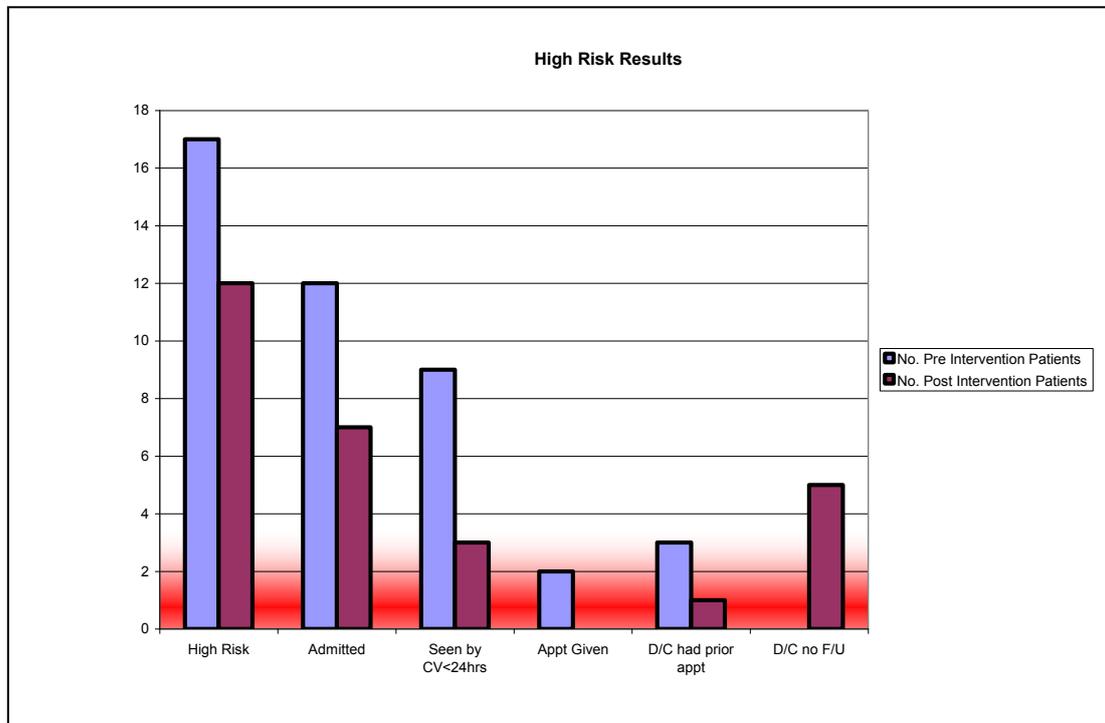
Low Risk Patients



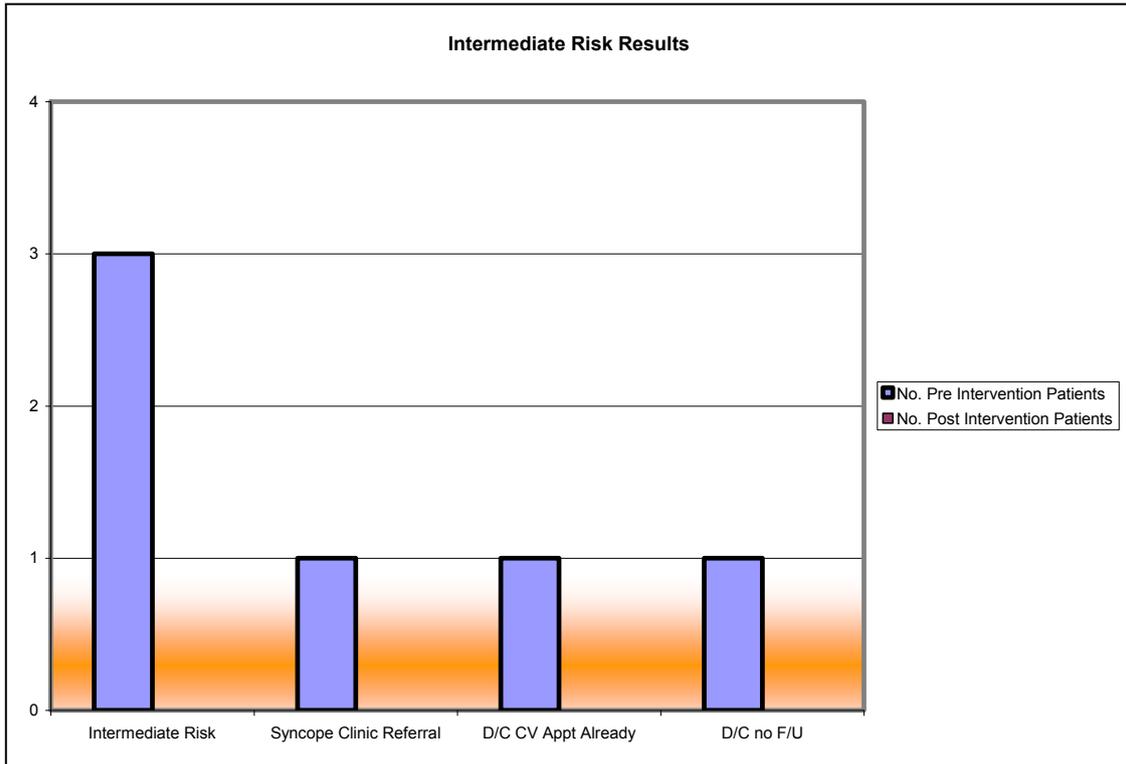
Low Risk – Pre Intervention					
	Low Risk	Discharged	GP Letter	F/U	Admitted
Patient Numbers	6	6	1	0	0
No ECG	2	2	0	0	0

Low Risk – Post Intervention					
	Low Risk	Discharged	GP Letter	F/U	Admitted
Patient Numbers	13	12	0	1 SC-VV	1 H'ache CT LP Neg
No ECG	2	2	0	1 CV	0

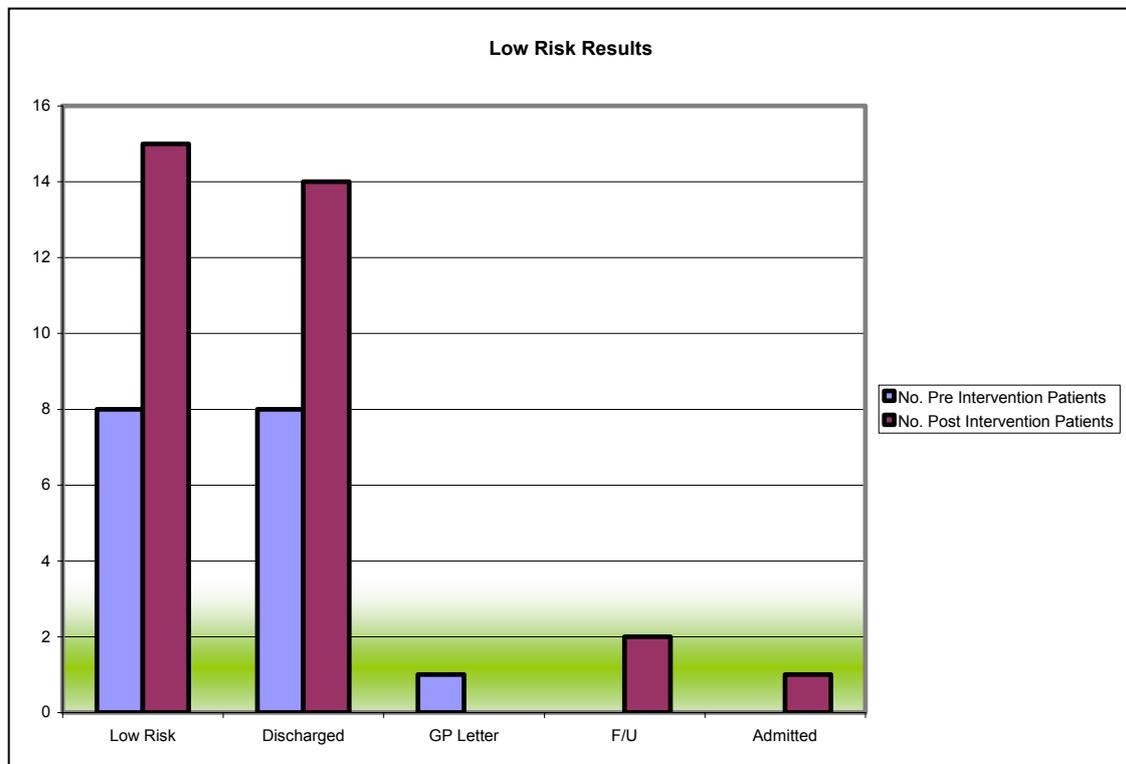
Table 3: No. of patients in the low risk category and subsequent routes of disposal



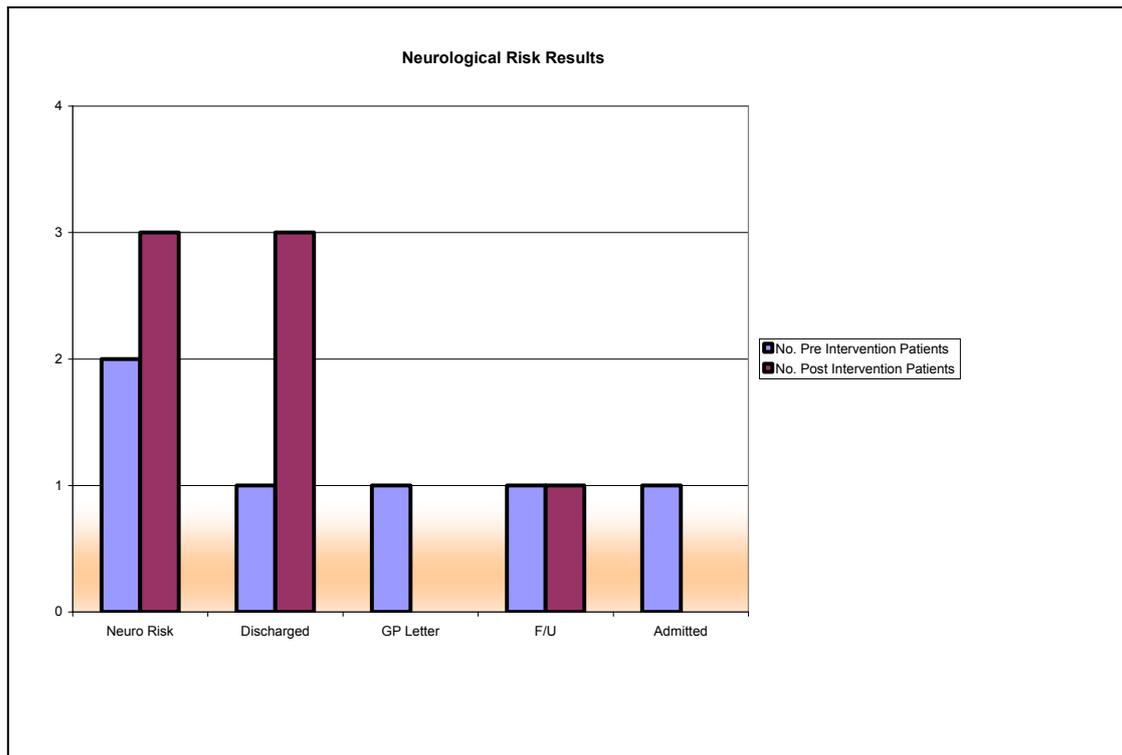
Graph 1: Comparison method of disposal of high risk patients between pre-intervention (blue) and post-intervention (purple)



Graph 2: Comparison method of disposal of intermediate risk patients between pre-intervention (blue) and post-intervention (purple)



Graph 3: Comparison method of disposal of low risk patients between pre-intervention (blue) and post-intervention (purple)



Graph 4: Comparison method of disposal of patients with neurological risks between pre-intervention (blue) and post-intervention (purple)

Discussion

Full initial assessment was not documented in 100% of patients both before and after the intervention; this information is classed as essential information required to make a correct management and referral judgement and thus should be being gathered.

During the pre-audit there were 4 patients who had not had an ECG. For the purpose of this audit, other risks were assessed and patients were risk stratified accordingly. This resulted in one patient aged 17 being classified as high risk as he was under investigation from Cardiology and awaiting a loop recorder. Two were classed as low risk with no other risk factors (aged 24 and 27). The fourth patient (aged 33) was classified as intermediate risk, at initial ED clerking and then had overnight telemetry and was discharged to be seen with an EEG by Dr Renton in clinic.

During the post-intervention audit 3 patients had no ECG at initial assessment. One aged 28 had TLOC on exertion, thus was classified to high risk. Of the two classified as low risk, one aged 18 was diagnosed as a vasovagal and the second aged 20 was referred to OPD cardiology where the cause thought to be neurally mediated. For the purpose of the following discussion the groups will include those stratified without ECGs.

Within the high risk groups, there were 17 patients pre intervention, 12 were admitted and 9 of these were seen within 24hrs by cardiology, the 3 remaining were managed by medics. For the others appointments varied from one given a cardiology appointment, one an appointment with another consultant and 3 were discharged from ED as they had a prior cardiology appointment for investigation.

In the 12 patients in the high risk post-intervention group 6 were admitted and one to OBS ward overnight. Only 3 were seen by cardiology within 24hrs. One patient was discharged from ED as having a prior appointment for pacemaker check and only one patient’s GP was asked to refer to cardiology if they felt it appropriate.

Of the high risk groups there was a 13% decrease in the numbers admitted post-intervention, and of those admitted a 32% decrease in those seen by Cardiology within 24hrs.

Within the intermediate risk group pre-intervention there were 3 patients identified, none were admitted, one syncope clinic referral, one pre-arranged cardiology referral and one discharged no follow up despite an ambiguous diagnosis. There were no intermediate risk patients in the post-intervention group.

Within the low risk group pre-intervention 8 were identified and all 8 were discharged, comments in only one clerking to ask GP to follow up if needed.

For the 15 post-intervention low risk patients 14 were discharged, 12 with no follow up, one had a syncope clinic referral which resulted in a diagnosis of a vasovagal, one had a Cardiology Appointment made. One patient was admitted and went on to have a CT head and LP which were negative.

Of the pre-intervention low risk group there was 100% discharged with no follow up, but only one doctor noted comments for GP in clerking and 93% discharged post intervention, there was also one inappropriate admission and 2 inappropriate clinic referrals.

Within the neurological group 2 were identified pre intervention, one was discharged with no follow up and the second after an overnight AMAU stay with telemetry. That patient had an outpatient EEG requested with follow up with a specific AMAU consultant arranged.

In the post-intervention group 3 patients were identified and discharged with only one appointment made for first fit clinic.

Results post-intervention show a worsening in all areas, with the exception of syncope clinic as there were no patients identified in the intermediate risk group for comparison. This could be for a number of reasons including a lack awareness of the intervention, or lack of availability of the document. The document name would suggest to the user that it is only useful if a syncope clinic referral is to be made, whereas it is actually a useful document for risk stratification and this could be utilized if the user were familiar with it. The results could also be due to inadequate sample size and a failure to catch the specific group of interest. This audit indicates the need for a further targeted intervention, to ensure appropriate, streamlining of the management of patients that present with TLOC.

Interventions that could prove efficacious are the introduction of a TLOC proforma, providing an aide

memoir for the correct work up of patients that would lead to accurate risk stratification across all levels and indicate the safest disposal of patients from the ED. This could provide direction and guidance towards appropriate investigations and management; an uncomplicated faint or situational syncope does not need immediate management and can be referred to the GP for further follow up.

Formal interdepartmental teaching should be given on TLOC using the NICE prepared teaching slides together with the introduction to all doctors and ANPs in the use of the proforma. Awareness of the referral process should be raised with posters in the doctors' room and mess areas to highlight the proforma introduction.

Conclusion

The complex results post-intervention show a failure to meet the target in all areas, with the exception of Syncope Clinic where we are unable to comment as there were no patients identified in the intermediate risk group post intervention for comparison.

The need for a full initial assessment should be emphasized to doctors in the acute settings along with mandatory ECG.

A proforma should be implemented as a guide to the most optimal approach in assessing and managing a patient that presents with TLOC.

High risk patients should be admitted and referred for a specialist cardiovascular assessment as standard within 24hrs. Intermediate risk patients discharged for Syncope clinic follow up and low risk discharged with written request for GP follow up if needed. Specialist clinics are available in RLH but are not being fully utilized. This process needs to be more robust and this could avoid costly inappropriate admissions and referrals and prevent unnecessary investigation.

Further teaching on the NICE guidelines and departmental paperwork for TLOC should be introduced followed by a re audit in an attempt to meet the NICE guidance of 100% change current practice.

The World Journal of Medical Education & Research (WJMER) is the online publication of the Doctors Academy Group of Educational Establishments. It aims to promote academia and research amongst all members of the multi-disciplinary healthcare team including doctors, dentists, scientists, and students of these specialties from all parts of the world. The journal intends to encourage the healthy transfer of knowledge, opinions and expertise between those who have the benefit of cutting-edge technology and those who need to innovate within their resource constraints. It is our hope that this interaction will help develop medical knowledge & enhance the possibility of providing optimal clinical care in different settings all over the world.



**DOCTORS
ACADEMY**
Disseminating Medical Knowledge and Skills Globally
ISSN 2052-1715

WJMER

World Journal of Medical Education and Research
An Official Publication of the Education and Research Division of Doctors Academy