Guideline for the Management of patients with Regular Narrow-Complex Tachyarrhythmia

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

This guideline covers the management of patients presenting to hospital with regular narrow complex tachycardias, commonly referred to as supraventricular tachycardias (SVTs).

This guideline is for use by the following staff groups :

Emergency department medical staff
Acute medical unit medical staff
Cardiology medical staff

Lead Clinician(s)

Dr W Foster	Consultant Cardiologist
Approved by Accountable Director on:	31st October 2018
Review Date: This is the most current document and is to be used until a revised version is available	31st October 2020

Key amendments to this guideline

Date	Amendment	Approved by:
20/5/15	Introduction summary added	
20/5/15	Staff groups to use added	
20/5/15	Dr French added to text as arrhythmia specialist	
20/5/15	Minor changes to text to improve clarity	
20/5/15	Audit standards (monitoring tools) added	
August 2017	Document extended for 12 months as per TMC paper approved on 22nd July 2015	TMC
December 2017	Sentence added at the request of the Coroner	
June 2018	Document extended for 3 months as per TLG recommendation	TLG
October 2018	Document reviewed with no changes	Dr Aldhoon

Guideline for the management of patients With regular narrow-complex tachyarrhythmia

Introduction

Most regular narrow-complex tachyarrhythmia (NCT) is due to:

- atrioventricular nodal re-entry tachycardia (AVNRT)
- atrioventricular re-entry tachycardia (AVRT) due to Wolf-Parkinson-White syndrome
- atrial flutter with 2 to 1 block (or occasionally 1 to 1 conduction), or atrial tachycardia

In some patients vagal manoeuvres (For example: carotid sinus massage, CSM; Valsalva) will terminate AVNRT and AVRT and may demonstrate the rhythm but not terminate atrial flutter or atrial tachycardia.
In almost all patients intravenous adenosine will terminate AVNRT and AVRT and will demonstrate the rhythm but not terminate it in atrial flutter / atrial tachycardia.
Severely compromised patients may require emergency cardioversion but it is reasonable to attempt to terminate the arrhythmia with CSM or adenosine whilst preparing for DCCV.

Patients Covered

All patients with regular narrow-complex tachyarrhythmia.

Guideline

1. Assess the patient.

2. If the patient is pulseless (i.e. in cardiac arrest – heart rate usually >250 per minute) perform **immediate** synchronised cardioversion and follow standard cardiac arrest guidelines.

3. Otherwise, record appropriate history.
   Clinical examination: record heart rate, BP, signs of heart failure or lung disease?
   Unless the patient is severely compromised, record a good quality 12-lead ECG and label with the patient's identity, date and time.
   If the patient is compromised, make preparations for DC cardioversion (For example: call for anaesthetics support).

4. Attach a 12-lead ECG machine (unless this will lead to excessive delay in a compromised patient). **Whilst recording a multi-lead ECG rhythm strip** apply carotid sinus massage (CSM), unless contraindicated by the presence of a carotid bruit or history of documented carotid artery disease.

5. If the arrhythmia is terminated by CSM, record 12-lead ECG in sinus rhythm and refer to arrhythmia clinic for advice on the need for further investigation or treatment

6. If carotid sinus massage demonstrates underlying atrial flutter or atrial tachycardia refer to guideline for the management of atrial fibrillation and atrial flutter.

7. If the arrhythmia persists despite carotid sinus massage, give adenosine 6 mg intravenously as a rapid bolus, **whilst recording a continuous multi-lead rhythm strip**. If this has no effect give 12 mg adenosine as a rapid bolus whilst recording a multi-lead rhythm strip. Note that asthma / COPD is listed as a contra-indication to adenosine use in the BNF; however in many cases it is safe but use clinical judgement (for example, consider the severity of the airways disease, whether the patient is currently wheezy, and consider the relative safety of alternative strategies).

Consult with a senior clinician before administering adenosine to a patient with airways disease.

8. If adenosine terminates the arrhythmia, record a 12-lead ECG in sinus rhythm and refer to arrhythmia clinic for advice on the need for further investigation and treatment. If adenosine demonstrates underlying atrial flutter or atrial tachycardia refer to guideline for the management of atrial fibrillation and atrial flutter.

9. If the arrhythmia persists despite CSM and adenosine and there was no change in heart rate with adenosine, demonstrating underlying atrial flutter or other atrial tachycardia, check the ECG again to ensure that this is not a broad complex tachyarrhythmia (i.e. ventricular tachycardia), in which case refer to guideline for that condition.

10. Next check the patient again: are there high-risk features? Systolic BP less than 90 mm Hg? Heart rate greater than 180? Continuing chest pain? Clinically overt heart failure? If so **seek expert help** to proceed to synchronised cardioversion.
If successful reassess patient and record 12-lead ECG in sinus rhythm. Refer for urgent in-patient cardiology assessment.

11. If arrhythmia persists or recurs after attempted cardioversion (3 shocks), **discuss with on call cardiologist** and consider intravenous amiodarone 300 mg over 20-120 minutes, followed by 900 mg over 24 hours. Amiodarone should be given by central venous cannula; alternatives include long lines or drum catheters. Refer for urgent in-patient cardiology assessment.

12. If there are no high-risk features **seek expert help**. Options include intravenous beta blockers or verapamil.

13. If these treatments restores sinus rhythm record 12-lead ECG. If the patient is well enough to be discharged, refer to arrhythmia clinic (dictate letter to Dr Will Foster / Dr Antony French and **enclose ECGs** in arrhythmia as well as sinus rhythm).

14. When patients present with a regular NCT that has been documented in the community or in the ambulance but that resolves spontaneously, assess the patient. If they are well enough to be discharged, refer to the arrhythmia clinic for advice on the need for further investigation and treatment (dictate letter to Dr Will Foster / Dr Antony French), including a copy of both the arrhythmia and subsequent ECG.

15. If the serum K+ is less than 4.0 mmol/l give potassium replacement therapy. If the arrhythmia persists, despite treatment as in the guidelines above, give intravenous potassium chloride and intravenous magnesium sulphate. If the arrhythmia resolves and the patient is stable, oral potassium replacement is usually adequate.

16. If the patient is well and is discharged from hospital before seeing a member of the cardiology team, give the patient photocopies of their ECG during the arrhythmia, ECG showing termination by CSM or adenosine, and ECG after arrhythmia termination. If cardiology opinion is required please refer to the arrhythmia clinic (dictate letter to Dr Will Foster and enclose ECGs).

Monitoring Tool

This should include realistic goals, timeframes and measurable outcomes.

How will monitoring be carried out?

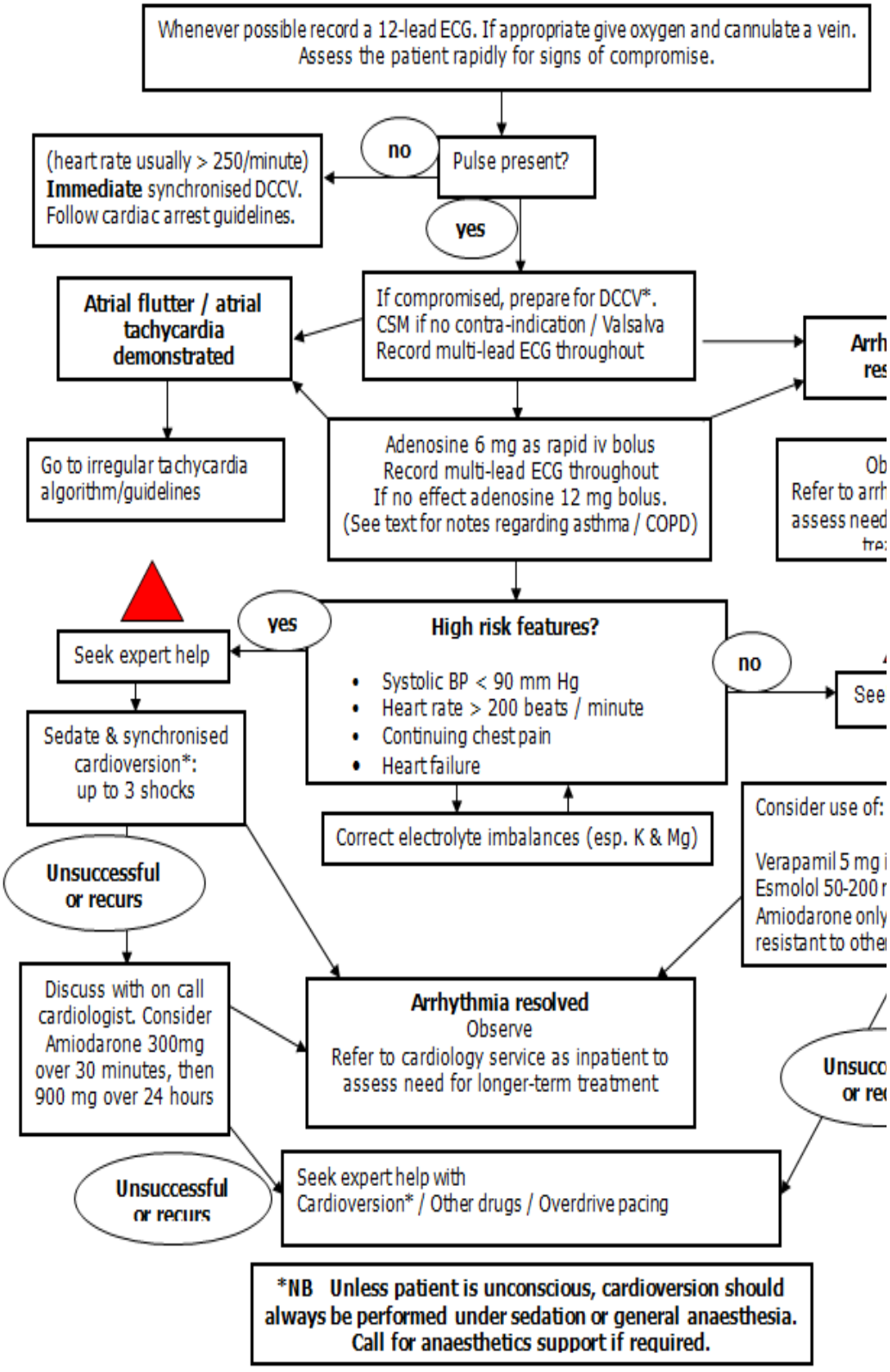
Who will monitor compliance with the guideline?

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
	Amiodarone given by central line	Audit of amiodarone use	Annually	Dr W Foster	Directorate audit meeting	Annually
	Referrals have appropriate ECGs enclosed	Audit of referrals to clinic	Annually	Dr W Foster	Directorate audit meeting	Annually

References

- Blomstrom-Lundqvist C et al. ACC/AHA/ESC Guidelines for the Management of Patients with Supraventricular Arrhythmias. www.escardio.org

Regular narrow complex tachycardia



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Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy/guidance affect one group less or more favourably than another on the basis of:**		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Transgender	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
	• Disability - learning disabilities, physical disability, sensory impairment & mental health problems	No	
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	No	
4.	**Is the impact of the policy/guidance likely to be negative?**	No	
5.	**If so can the impact be avoided?**	N/A	
6.	**What alternatives are there to achieving the policy/guidance without the impact?**	N/A	
7.	**Can we reduce the impact by taking different action?**	N/A	

If you have identified a potential discriminatory impact of this key document, please refer it to Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Human Resources.

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval