Emergency Aortic Dissection Pathway Toolkit

Seven key principles: Summary of action

Practical advice and guidance for commissioners, service providers, and clinicians to support system-wide improvement in the care management of emergency acute aortic dissection patients

» Toolkit on a page

» Introduction

Overview

The full Emergency Aortic Dissection Pathway toolkit is available from <ADD link.....>.

The toolkit provides actions to improve care for emergency acute aortic dissection (AAD) patients, from diagnosis through clinical decision making and treatment.

The toolkit:

- supports the creation of rotas of specialists in regional networks for referring hospitals in a specific geographic area;
- describes the level of governance required to demonstrate improvement in outcomes and reduction in variation;
- provides an insight into how this can improve patient care using real life examples.

This interactive tool highlights the key actions represented in the toolkit, with self assessment questions included alongside these actions.

The self-assessment questions are designed to help identify any current gaps in service provision and/or current opportunities to enhance or develop services/systems at a local level. They can also help when considering future demand, using local intelligence alongside projected data to ensure accuracy and consistency.

Aortic dissection: definition and outcomes

An aortic dissection occurs when the inner wall of the aorta tears, causing blood to leak between the layers. This is a sudden event and presents as a medical emergency.

There are two main types of aortic dissection, type A and type B.

- Type A dissection requires emergency surgery, this is complex and has a high mortality rate.
- Type B dissection has a lower mortality rate and many can be treated medically. Approximately 15-20% of type B dissections require ongoing support. Lifelong surveillance is essential for these patients to identify complications and treat them in a timely fashion.

AADs carry a high risk of fatality. In 50% of Type A cases, death occurs before patients reach hospital. Of the remainder, a further 50% will be dead within 24 hours without surgical treatment. Patients who survive are at risk of future chronic complications requiring intervention.

Benefits

A prompt and proper diagnosis of AAD – with patients moving as quickly as possible from initial presentation to theatre at a specialised cardiac centre – is vital to increase a patient's chance of survival and to prevent grievous complications, such as lethal malperfusion syndrome, aortic regurgitation, cardiac failure, and stroke.

Establishing key principles for managing AAD along the whole pathway, from the point of diagnosis through clinical decision making and treatment, should help to save lives, as has been seen in the establishment of pathways for major trauma.

Seven key principles

Seven key principles to improve care for emergency AAD patients have been identified. The principles for development should form the basis for all regional solutions and include all commissioned Cardiac and Vascular Surgical Centres within the region who deliver emergency care.

Key to the successful implementation and delivery of the principles will be:

- Involving all relevant commissioners, service providers, clinicians, and patients at all stages to design a service that fits local circumstances.
- Preparing a written proposal including an options appraisal.
- Formalising arrangements and an agreement of governance to enable discussion and collaboration as the process develops.
- Appointing one clinician to lead the improvement programme and be the point of contact with outside agencies. The nominated lead will need to ensure group members are updated on progress, and liaise with colleagues on key stakeholder engagement arrangements, for example ahead of contacting Medical Directors.

Self-Assessment Questionnaire

Responses to the self-assessment questions can be captured within this interactive tool by selecting the button response (yes, partly, no, not applicable) to each question. An excel based tool is also available, which enables the capture of changes in responses over time. The Excel tool can be accessed from <ADD link.....>.

These questions should be used alongside other resources to facilitate discussion. A page for notes and comments is included at the end.

Principle 1
Regional governance

There should be formal written governance arrangements between providers for day to day management and contingency plans.

Key area for focus	Actions to take	Self-assessment questions	Yes	Partly	No

A Standard Operating Procedure	• A Standard Operating Procedure (SOP) should be in place, available to all, and be endorsed by Trust management and commissioners.
	• The SOP should include:
	  • Multi-Disciplinary Team (MDT) membership and responsibilities.
	  • published emergency referral pathways.
	  • a protocol for early medical management and treatment.
	  • an imaging protocol, including where ECG gated CT scan is necessary to confirm the diagnosis.
	  • a local protocol for safe patient transfer.
	• The SOP should be reviewed and updated annually.
		1-1 Do you have an appointed Clinical Lead?	☐	☐	☐

		1-2 Have you arranged administrative support?	☐	☐	☐
		1-3 Do you have a Standard Operating Procedure (SOP), endorsed by Trust management and commissioners, in place?	☐	☐	☐
		1-4 Does your SOP cover the whole pathway, including medical management, emergency referral, imaging, and transfer?	☐	☐	☐
		1-5 Is your SOP reviewed and updated annually?	☐	☐	☐
Governance meetings	• Regional governance meetings should take place quarterly. • A national governance review should be undertaken each year.	1-6 Do you hold regional governance meetings at least quarterly?	☐	☐	☐
		1-7 Do you participate in the national annual governance review?	☐	☐	☐

Monitoring of performance	• There should be a prospective data collection programme in place that reviews key performance indicators (KPIs) and compulsory data submission to national audits (NICOR & NVR).
	• As a minimum, the following KPIs should be included:
	  • Mortality - in-Hospital (with/without intervention), deaths between diagnosis and intervention, deaths between diagnosis and reaching place of safety, death within one year.
	  • Hospital activity - length of stay, number of referrals/interventions.
	  • Duration - time from presentation to CT, referral to intervention.
	  • Patient reported - patient and relative satisfaction survey (annual).
	• Baseline monitoring prior to go live should be undertaken, followed by ongoing monitoring to ensure impacts are appropriately captured.
		1-8 Have you made arrangements to collect key performance indicators (KPIs)?	☐	☐	☐

		1-9 Have you completed KPI baseline monitoring?	☐	☐	☐
		1-10 Do you monitor and review KPIs?	☐	☐	☐

» Principle 2

Co-ordination through a Regional Multi-Disciplinary Team and a Multi-Disciplinary Meeting

The MDT is the core element of the acute response which determines the intervention for the acutely unwell patient.

Key area for focus	Actions to take	Self-assessment questions	Yes	Partly	No
MDT membership	• Appropriate multidisciplinary and managerial support, including the support of Anaesthetist and Critical Care, should be available, determined by local circumstances. • MDT as a minimum this should include a cardiothoracic and vascular surgeon and an interventional radiologist.	2-1 Is there appropriate multidisciplinary and managerial support in place?	☐	☐	☐
		2.2 Have you agreed the named members of your multi disciplinary team?	☐	☐	☐
		2-3 Does your MDT include a cardiac and vascular surgeon and an interventional radiologist?	☐	☐	☐
MDM process	• MDT members should attend the Multi-Disciplinary Meeting (MDM) and be involved in elective work on the thoracic aorta. • The MDM needs to be regular and frequent enough to allow timely decision making. • There needs to be a facility to hold urgent ad-hoc MDM calls outside the formal MDM within a described on-call rota. • Acute MDM reviews should be enabled digitally. • Appropriate administrative support should also be provided.	2-4 Does your MDT have a regular MDM?	☐	☐	☐
		2-5 Is the frequency of MDMs regular enough to allow timely decision making?	☐	☐	☐
		2-6 Is there a facility to hold urgent ad-hoc MDM calls 24 hours a day, seven days per week, by members of the on-call rota?	☐	☐	☐
Decision-making	• All type A and type B patients should have a first discussion at the point of diagnosis with an appropriate member of the MDT. • All patients should be discussed by the MDT at the MDM. • All decisions, including transfers, further CT scans, management escalation, follow up, palliative care should be agreed and fully documented as clinically appropriate in the patient notes. • There needs to be clear agreement documented for each case about when the management of a type B patient should be escalated.	2-7 Are all patients discussed by the MDT at the MDM?	☐	☐	☐
		2-8 Are all decisions agreed and fully documented as clinically appropriate in the patient notes?	☐	☐	☐

» Principle 3

Regional rota & single point of contact

The aim is to make referral by Emergency Departments simple and rapid and ensure all patients within the region are able to access the same care pathway.

Key area for focus	Actions to take	Self-assessment questions	Yes	Partly	No
Rota capacity planning	• The regional rota should be staffed by the members of the MDT. • Regions should decide who the people on this rota are, according to local circumstances. • The regional rotas should ensure that at least one consultant from each of the core specialties is available 24 hours seven days per week. • A published rolling rota, with contact details, should be distributed to all hospitals within the network.	3-1 Is there always a single point of contact available, 24 hours a day, seven days per week?	☐	☐	☐
Single point of contact	• The single point of contact should be a consultant grade or equivalent who is capable of and experienced enough to take significant clinical decisions. • Contact should be via a fixed phone number that transfers to the on-call consultant. • The on-call consultant will decide on the appropriate pathway, including initial management and patient destination.	3-2 Is the single point of contact always a consultant grade or equivalent and capable of and experienced enough to take significant clinical decisions?	☐	☐	☐
Access to additional resources	• There should be a backup mechanism in place in the event that the on-call consultant who is the single point of contact is unavailable. • If the single point of contact can't physically admit the patient to their unit it is their responsibility to locate an alternative within the area; suitable for the patient, not for the referring team, to manage. • The single point of contact should have access to other specialties within the MDT to discuss 1cases as required and ensure a multidisciplinary approach where clinically appropriate.	3-3 Is there a backup always available in the event that the single point of contact is unavailable?	☐	☐	☐

» Principle 4

Timely and reliable image transfer

"Prompt sharing of acute imaging is vital in cases of suspected aortic dissection to ensure that lifesaving treatment is not delayed and instances where repeat imaging has to be obtained are minimised to the greatest extent possible." Royal College of Radiologists

Key area for focus	Actions to take	Self-assessment questions	Yes	Partly	No
Access	• Access to imaging should be available 24 hours a day, seven days per week. • Transferring images to tertiary centres for emergency interpretation by an appropriate radiologist should be available 24 hours per day, seven days per week.	4-1 Is there radiologist interpretation available, on-site or via a tertiary centre, 24 hours per day, seven days per week?	☐	☐	☐

Process	• To ensure that lifesaving treatment is not delayed the prompt sharing of acute imaging is vital, alongside minimising the need for repeat imaging.
	• The consultant on-call should alert the PACS Office of the hospital receiving the images that they are being transferred.
	• A safe and fast system of sharing images should be in place. One option would be the Image Exchange Portal (IEP).
	• Where images are to be transferred through the IEP the following steps should be taken:
	  • When dissection is confirmed, the reporting radiologist:
	  • Alerts referring physician and reminds them of the contact number.
	  • Arranges for image transfer to on-call centre.
	  • Image is transferred via IEP on the Clinical Emergency pathway.
	  • In the message field write Acute Aortic Dissection Pathway.
	  • For patient identification, include NHS number, patient name (Forename, Surname) and date of birth.
		4-2 Is there an established process in place for image transfer?	☐	☐	☐

		4-3 Has this process been tested and found to be reliable?	☐	☐	☐

Principle 5
Safe transfer

Clear protocols for the safe transfer of patients need to be set out and adhered to.

Key area for focus	Actions to take	Self-assessment questions	Yes	Partly	No
Adult Critical Care Transfer Service	• Type A and complicated type B dissection should be transferred by the regional Adult Critical Care Transfer Service for the region the patient is in. • Clear arrangements should be in place for instances where transfers by the regional Adult Critical Care Transfer Service are not possible, including arrangements for a hospital team with appropriate training and education in critical care transfers to escort the patient. • A level 2/3 critical care bed should be available for type A and complicated type B dissections at the receiving centre.	5-1 Do you have an Adult Critical Care Transfer Service available to transfer all Type A and complicated Type B cases to the regional specialist centre?	☐	☐	☐
		5-2 Have arrangements been made to utilise the Adult Critical Care Transfer Service for transfer?	☐	☐	☐
Repatriation arrangements	• Where appropriate there should be repatriation arrangements in place between local centres. • The referring centre should be supported by the receiving centre MDT and further discussion about all cases (even when a decision has been taken not to transfer or escalate) should occur with a member of the MDT. • In establishing arrangements regional ambulance service(s), Adult Critical Care Transfer Service and Adult Critical Care networks should be involved from an early stage to secure their agreement and ensure they work within the principles of NHS England and NHS Improvement guidance. • Clear arrangements for the management of patients during tranfer should be in place.	5-3 If Adult Critical Care Transfer Service is not available have you agreed transfer protocols with your regional ambulance service?	☐	☐	☐
		5-4 Does your protocol include arrangements for patient management during transfer?	☐	☐	☐

Principle 6

Specialist treatment for all acute aortic dissections

Patients with acute aortic dissection need to be treated in a place which can provide the appropriate level of care for their clinical needs, in a timely manner and as close to their home as is safe.

Key area for focus	Actions to take	Self-assessment questions	Yes	Partly	No
Type A dissections	• All type A patients should be transferred to the regional specialist centre for assessment, unless there are very clear reasons why operative intervention is inappropriate • Transfer should be to the ITU or theatre, depending on the patient's circumstances and advice from the consultant on-call. • Where the decision is made to treat the patient palliatively, the patient should not be transferred, and arrangements should be made for end of life care.	6-1 Are all type A patients suitable for surgery operated on by a member of the MDT?	☐	☐	☐
Type B dissections	• Patients with complicated Type B dissection requiring immediate intervention should be transferred to the regional specialist centre for assessment. • All type B patients should be cared for in a level 2/3 critical care area, where invasive blood pressure monitoring and control can be managed. • Those not requiring immediate intervention can be transferred to the specialist centre for medical management or managed locally, following agreed protocols.	6-2 Are agreed protocols in place for the management of all Type B patients not requiring immediate intervention, including either transferring to the specialist centre for medical management or managed locally?	☐	☐	☐
		6-3 Are all patients with complicated Type B dissection requiring immediate intervention transferred directly to a level 2/3 critical care area within the regional specialist centre?	☐	☐	☐
Non type A or B *Primary entry tear in the arch*	• Non type A or B patients should be transferred to the regional specialist centre under joint care of the cardiac and vascular surgery teams. Where these two specialities are not on the same site, the patient should be transferred to the cardiac site. • As these patients are complicated to manage the images for patients suspected of having this condition need to be transferred to the specialist centre on call for expert interpretation and management.	6-4 Are protocols in place for the management of non Type A or B patients	☐	☐	☐

Principle 7
A regional education programme

Key area for focus	Actions to take	Self-assessment questions	Yes	Partly	No

Education	• There needs to be an education programme for staff involved in all stages of the patient pathway including training for:
	  • ambulance and paramedic crews,
	  • Emergency Department front line staff,
	  • diagnostic teams,
	  • cardiothoracic and vascular teams,
	  • critical care and coronary care teams.
	  • This training should address how the regional pathway works.
	• Training should be in place before the launch of the pathway and repeated at appropriate intervals.
		7-1 Has an education programme been developed to describe how the regional AAD pathway will operate for all staff involved?	☐	☐	☐

		7-2 Will training be in place and rolled out before the launch of the pathway?	☐	☐	☐
		7-3 Are arrangements in place for the training to be repeated at appropriate intervals?	☐	☐	☐

Notes

Please use the box below to add any notes or comments