

To establish a one stop checklist system prior to Cardiac CT to further improve patient care pathways.

Sunita Avinash, Chee Liew, Ranjit More, Ben Ward, Kerry Walker, Noel Topping, Anoop Chauhan

Lancashire Cardiac Centre, Blackpool Teaching Hospitals NHS Foundation Trust

Cardiac CT has become the preferred choice of investigation in the last few years. This was due to NICE recommendations in the chest pain pathway and now the GIRFT report. With increasing requests, the waiting list grew. This was exaggerated in Covid, when all activity came to a standstill. To maximise capacity and driven by a huge backlog, we successfully started radiographer led lists and then oral Bisoprolol pre-CTCA. This reduced the waiting times dramatically from 8 months to 4-6 weeks.

What we did and found

An audit was undertaken of 100 random patients attending for cardiac CT between the months of September 2021 and February 2022 to understand the time taken for the checklist. The time varied depending on how much elaboration was needed and, on some occasions, longer if the patient was elderly or hard of hearing. We found from our information gathering:

5 min-13;6 min -16; 7 min 2; 8 min-12; 9 min -21; 10 mn-32;12 min-4.

Checklist to be attached to cardiac CT request

IODINATED CONTRAST MEDIA		YES	NO	BETA-BLOCKERS		YES	NO
Is the patient Diabetic?				Are you already on beta-blockers?			
Do they take Metformin/Glucophage?				If Yes, drug name & dosage:			
Do they have any Kidney problems?				Asthma, COPD, Emphysema, etc.			
Do they have uncontrolled Asthma?				Do you have a Pacemaker?			
Do they have any Allergies?				Are you currently in Heart Failure?			
Hyperthyroidism / Thyroid Co				Do you have Heart Block?			
Any previous reaction to Contrast				Are you Allergic to beta-blockers?			
RENAL FUNCTION				GLYCERYL TRINITRATE (GTN)			
Creatinine (µmol/L)				Do you have severe Hypotension?		YES	NO
Urea (mmol/L)				Do you have Aortic valve stenosis?			
eGFR (ml/min/1.73 ²)				Do you have Mitral valve stenosis?			
Date sample taken				Are you allergic to GTN or Nitrates?			
Authorisation to administer intravenous contrast (if no results available or to override)				Contraindications checked and GTN administered by the Radiographer			
Signature:				Name:			
				Signature:			

Supervised <input type="checkbox"/>	Unsupervised <input type="checkbox"/>	Private Patient <input type="checkbox"/>	Patient Name:
			Hospital No.:
SCAN PROTOCOL	BIS CODE	MEDICATION / POST PROCESSING	
Coronary & Calcium Score	CCASC, CACRY	Beta-Blockers / Metoprolol (If Heart rate >60bpm)	
Coronary Only	CACRY	<input type="checkbox"/> (I.V. Metoprolol 5mg/ml. A maximum of 80mg to be administered by Radiographers under this prescription sheet. Any additional dosage to be separately prescribed by the Consultant Radiologist covering the list)	
Graft	CCORGC	<input type="checkbox"/>	
Gated Aorta to Diaphragm	CTHXG	Glyceryl Trinitrate (GTN) Spray (2 x 400 micrograms / spray) are prescribed to be administered subsequently prior to the CT scan by the radiographer undertaking the examination.	
Gated Aorta to Renal Level	CTHXG, CAREA	<input type="checkbox"/>	
Gated Aorta to Bifurcation	CTHXG, CABAOC	<input type="checkbox"/>	
TAVI (Trans catheter Aortic Valve Implantation)/ Mitral	CTAVI	Vessel Measurements & Reconstructions (if time permits)	
Double Rule Out	CAPUG, CTHXG	<input type="checkbox"/>	
Triple Rule Out	CAPUG, CTHXG, CACRY	Metoprolol Tartrate 5mg/ml & Glyceryl Trinitrate 400µg are administered by suitable trained radiographers. If the above boxes are ticked then it is acknowledged that the medications have been prescribed by the radiographer justifying this process.	
Contrast in Right Heart	CACRY	Justified by:	
Functional Coronary	CACRY	<input type="checkbox"/>	
Functional Graft	CCORGC	Date:	
Other (please specify)		<input type="checkbox"/>	

Results

The data showed a variation in time taken to get the patient from the point of check in onto the scanner. In addition, some patients had to be sent away due to heart rates, contrast reactions or arrhythmias. On a few occasions, the patient would refuse to undergo the scan due to claustrophobia. By uniform checklist at the point of referral, we would also not miss out those referred from different sources. The key stakeholders were involved, namely the pharmacist, nursing staff, referring doctors and the radiographers. The scan process would then only involve IV access and the study. Unfortunately, we were unable to trial this as the services were mainly through telephone consultations. As clinical practice returns to normal, we intend to run a pilot and audit the effectiveness of this change in practice.

Lessons learned

By working together in a multi professional team and with the common mindset of improving services for our patients, we developed a radiographer led service for IV betablockade, then a protocol for oral betablockers. This was the next novel idea to further streamline and standardise the cardiac CT service.

What started out as small ideas and then changes suggested, led to a significant decline in waiting times and improved patient care. The department can do more cardiac CTs per session which in turn generates revenue for the department.

no. of pts

