

## **K.4 Cardiac MRI in tricuspid regurgitation**

### **K.4.1 Research recommendation**

In adults with asymptomatic severe tricuspid regurgitation what is the prognostic value and cost effectiveness of cardiac MRI for assessment of the right ventricle to assess the need for intervention?

### K.4.1.1 Why this is important

Prognostic parameters that predict symptomatic deterioration, development of heart failure that may not be reversible following valve intervention or mortality inform the need for valve intervention in patients with asymptomatic severe heart valve disease to avoid poor outcome

### K.4.1.2 Rationale for research recommendation

Importance to 'patients' or the population	To provide an appropriate or better alternative than echocardiography
Relevance to NICE guidance	Evidence may support recommendations on the prognostic value of MRI in this population.
Relevance to the NHS	The introduction of cardiac MRI for those in whom the need for intervention is unclear after echocardiography may lead to significant increase in cost that, however, may be balanced by the benefit in accuracy and avoidance of adverse events due to delayed intervention.
National priorities	"Action on prevention" long term plan
Current evidence base	One small study was identified that looked at the prognostic value of a reduced right ventricular ejection fraction on cardiac MRI to predict outcome in tricuspid regurgitation, which was not considered sufficient to base recommendations on
Equality considerations	None identified

### K.4.1.3 Modified PICO table

Population	<p><u>Inclusion</u></p> <p>Adults aged 18 years and over with diagnosed tricuspid regurgitation requiring further tests after echocardiography to determine whether intervention is needed.</p> <p><u>Exclusion</u></p> <ul style="list-style-type: none"> <li>• Children (aged &lt;18 years)</li> <li>• Adults with congenital heart disease (excluding bicuspid aortic valves).</li> <li>• Adults with previous intervention for HVD (surgical or transcatheter).</li> </ul>
Prognostic variables	Right ventricular ejection fraction on cardiac MRI
Outcome	<p>Indication for intervention based on prognosis for the following without intervention:</p> <ul style="list-style-type: none"> <li>• Mortality (1 and 5 years)</li> <li>• Hospital admission for heart failure or unplanned intervention (1 and 5 years)</li> <li>• Reduced cardiac function (echo parameters – LVEF) 1 and 5 years</li> <li>• Symptom onset or symptom worsening (e.g. that led to surgery being required) 1 and 5 years</li> </ul> <p>Indication for intervention based on predictors of the following post-operative outcomes:</p> <ul style="list-style-type: none"> <li>• Mortality (6 and 12 months)</li> </ul>

	<ul style="list-style-type: none"> <li>• Hospital admission for heart failure (6 and 12 months)</li> <li>• Reduced cardiac function (echo or cardiac MRI parameters – for example LVEF &lt;50%) (6 and 12 months)</li> <li>• Return to normal LV volumes post-operatively based on echo or cardiac MRI as defined in the study (6 and 12 months)</li> <li>• &gt;20% reduction in LV volume post-operatively based on echo or cardiac MRI (6 and 12 months)</li> </ul>
Study design	Cohort adjusted for all key confounders
Timeframe	Long term
Additional information	None