



Transcatheter aortic valve implantation (TAVI) for the treatment of patients with severe symptomatic aortic stenosis who are at intermediate surgical risk

What is severe symptomatic aortic stenosis?

In aortic stenosis, the main valve which allows blood to flow from the heart becomes narrowed.

Symptoms can include chest pain, tiredness and shortness of breath. Where the condition is severe it can lead to heart failure which may become life-threatening.

The condition is more common in older people.

What is transcatheter aortic valve implantation (TAVI)?

Treatment of aortic stenosis aims to reduce symptoms and improve quality of life. The standard treatment is open heart surgery to replace the heart valve.

TAVI is a procedure which can be an alternative to this. In TAVI, the patient's own valve is not replaced but instead a new valve is placed inside it. TAVI does not require open heart surgery.

The new valve is inserted through the blood vessels in the groin or sometimes using a small incision in the chest wall.

At the moment, TAVI is offered to patients who are unable to undergo open heart surgery and for those where surgery would be too risky.

This project looked at whether TAVI should be offered to a wider group of patients including some who might at the moment be offered open heart surgery.

What we did

We looked at an assessment of TAVI produced by the European Network for Health Technology Assessment (EUnetHTA) and incorporated this with studies on patient experience and information on the value for money of the procedure in this group of patients.

We also did some modelling of the potential costs and benefits of TAVI compared with open heart surgery to replace the aortic valve to work out if it would be a good use of NHSScotland resources.

What we found

In this patient group, TAVI and open heart surgery have similar health benefits. With TAVI, patients need less time in hospital. As they are very different procedures they have different harms associated with them.

There was uncertainty around whether TAVI valves would be durable enough for use in this group of patients since they have only been tested in studies lasting for around 5 years. Longer-term studies, following patients for 10 or more years are needed.

Patients value information and support from healthcare professionals to help them and their caregivers make decisions around undergoing TAVI.

The cost of a TAVI device ranges from £15,000 to £25,000, depending on the type of valve and the manufacturer of the valve.

We found it unlikely that TAVI in this group of patients represents a good value for money alternative to open heart surgery in NHSScotland, although this depends very much on the costs of the valves, which is subject to change.

What is our advice to NHSScotland?

We advised that TAVI may be considered as an alternative to open heart surgery as the benefits of the two procedures are similar.

We noted that patients and healthcare professionals should discuss all the relevant factors and decide together on the most appropriate course of action.

We cautioned that, in most cases, TAVI is unlikely to be the best value-for-money option for NHSScotland, but that this is very much dependent on the cost of the valve.

Future work

There are three trials underway which will provide more information on which patients will benefit most from TAVI.

Longer term studies are needed to assess whether TAVI valves will be long lasting or will deteriorate over time and need replaced.

This plain language summary has been produced based on SHTG Advice Statement 04-19 (May 2019)