

May 27, 2010

## What is TAVI?

- Transcatheter aortic valve implantation (TAVI) is an innovative method for replacing diseased aortic valves. It was developed by Dr. John Webb at St. Paul's Hospital in Vancouver about a decade ago. It has become a more common procedure in the past five years.
- The technique involves inserting a replacement valve made of cow tissue, strengthened with a stainless steel stent, into the human heart. The valve is inserted into the body by a catheter in the femoral artery [in the groin] and moved through the chest into position.
- The patient's malfunctioning aortic valve is pushed out of the way and replaced.
- If the femoral approach is deemed unsuitable, the valve can be inserted into the heart (again, using a catheter) by making a small incision on the left chest wall, just below the nipple.
- The entire procedure takes about half the time of conventional open-heart surgery.

## What is aortic stenosis?

- Aortic stenosis is a common disorder, particularly among the elderly, where the aortic valve undergoes degeneration and calcification as part of the aging process.
- In severe cases, the problem causes a narrowing of the outflow tract of the left ventricle, which is the main pumping chamber of the heart, in turn restricting blood flow from the heart to the body.
- The condition results in chest pain, dizziness, and symptoms of heart failure, such as shortness of breath and extreme fatigue. It can lead to a heart attack, stroke or sudden death.
- Consequently, severe aortic stenosis significantly reduces the individual's quantity and quality of life.

## How were patients treated before?

- Until now, Albertans with aortic stenosis were treated through open heart surgery, a highly successful but invasive and potentially traumatic procedure.

- Those deemed too old or sick for open heart surgery were either referred to St. Paul's Hospital in Vancouver for TAVI, or declined for surgery.
- The prognosis for someone with aortic stenosis and deemed unsuitable for open heart surgery is about two years. Without surgery, their lifestyles will be severely limited. They will likely suffer shortness of breath, chest pain and extreme fatigue, and will likely be in and out of hospital.

## How will patients be treated now?

- Patients diagnosed with aortic stenosis will take part in a consult with physicians. If they are deemed unsuitable for open heart surgery, they will be referred to the TAVI team at the Mazankowski Alberta Heart Institute in Edmonton.
- A cardiac team is expected to begin performing the procedure at Calgary's Foothills Medical Centre by late summer or early fall.

## When did AHS begin doing the TAVI procedure?

- A cardiac team made up of experts from the Mazankowski and the Royal Alexandra Hospital spent three days at St. Paul's Hospital in April training under the guidance of Dr. John Webb.
- Two patients were operated on at the Mazankowski Alberta Heart Institute in mid-May, followed by a third patient two days later.
- The first two patients were discharged from hospital and sent home within two days. The third patient remains in hospital with some other age-related health issues.

## Why has AHS not performed the procedure until now?

- TAVI was first performed about a decade ago; however, for the first five years, it was considered largely experimental and under development. It has since become a more common procedure.
- The replacement valve is approved by Health Canada for "investigational use only" however Health Canada can approve it on a case-by-case basis. The TAVI team must apply to Health Canada to use the valve for each procedure.
- The Mazankowski Alberta Heart Institute opened in July 2009 and it was always intended that TAVI would be introduced at the facility once it was fully operational.

## Why are Alberta patients no longer being sent to B.C.?

- It is preferable for patients to be treated closer to home. Traveling to British Columbia brought added stress on patients, their families and the health-care system.
- The waiting list for the TAVI procedure at St. Paul's Hospital in Vancouver is now close to a year, which is too long for many patients with severe aortic stenosis.

## Has anyone been recruited specifically for this procedure?

- The operations will be conducted by in-house cardiac teams in Edmonton. A structural heart specialist has been hired to work with the team in Calgary.

## How many patients had to travel to Vancouver to have the TAVI operation?

- A handful, between five and 10. Some were referred to St. Paul's, but were not operated on.

## How much does each TAVI procedure cost?

- Costs include the manufactured valve (about \$25,000), made by Edwards Lifesciences, plus overheads, health-care staff time and fees.