

## Assessment and Treatment of Mitral Stenosis In Trinidad and Tobago

Written by Maria Vinall

Mitral stenosis (MS), although relatively uncommon in more developed countries due to the widespread availability of antibiotic therapy, is still an important clinical entity in the developing world and in the Caribbean as well. If it is not diagnosed and treated appropriately, MS can lead to significant morbidity. In MS, the mitral valve becomes thickened and immobile and does not open completely, which leads to increased pressure in the chamber. Fareed Nuri Ali, MD, Trinidad and Tobago, reviewed MS and how it is diagnosed and treated in Trinidad and Tobago.

Clinical evaluation, transthoracic echocardiogram (TTE)/ Doppler, transesophageal echocardiogram (TOE), exercise echocardiography, and 3D TTE are the diagnostic tools that are used to determine the presence and severity of the stenosis, as well as the optimal timing and mode of intervention. Although 2D TTE and conventional Doppler are used routinely in the assessment of mitral stenosis, TOE can detect left atrial thrombi better in patients with severe MS who have atrial fibrillation.

The Wilkins scale is the standard means of determining the feasibility of percutaneous mitral valvotomy (Figure 1). A score of less than 9 favors valvotomy success. The scale can also be used to assess valve mobility, thickening, and calcification and the subvalvular apparatus; however, commissural calcification is not assessed, and many patients fall into the “grey area” (a score of 10 to 12) on the scale. The scale is also limited

by the fact that all components carry the same weight in the assessment process. The Wilkins score is a good tool for guiding the decision process, but ultimately, the cardiology team must decide how to proceed. Assessment of commissural morphology with TOE can predict outcome after balloon mitral valvuloplasty, adding accuracy to the Wilkins score.

Exercise TTE is useful for detecting changes in mean gradient across the valve, as well as changes in right ventricular systolic pressure. The ability to exercise and exercise-induced symptoms can also be determined. The addition of 3D to TTE may make it easier to visualize the subvalvular apparatus morphology and provide more accurate planimetry than 2D.

Dr. Ali presented three cases that showed how these tools can be used to determine which MS patients are best suited for mitral valve replacement, mitral valvotomy, or less invasive treatment approaches. He emphasized that symptoms are an important consideration in determining when and how to intervene in patients with MS. Sophisticated echocardiographic studies provide important anatomical data and are helpful in determining the appropriate procedure for each patient and whether or not symptoms are related to valve lesion. Right and left ventricle function and response to exercise are helpful for guiding the most appropriate intervention.

Surgery remains the mainstay of treating mitral stenosis when the disease process is sufficiently advanced. “Percutaneous valvuloplasty is a potential useful treatment, as it is minimally invasive and has excellent results in the correct patient population and is a treatment approach that we would like to see performed more in Trinidad,” stated Dr. Ali.

**Table 1. Wilkins Scale.**

| Grade | Mobility               | Thickening  | Calcification                            | Subvalvular thickening   |
|-------|------------------------|---|--|--|
| 1     | Only tips affected     | Normal (4-5 mm)                                   | Single area calcification                | Minimal thickening just below leaflets                             |
| 2     | Middle and base mobile | Leaflet tips affected (5-8 mm)                    | Scattered areas confined to margins      | Thickening extending up to 1/3 chordal length                      |
| 3     | Some movement base     | Entire leaflet thickened (5-8 mm)                 | Extending to middle portions of leaflets | Extending to distal 1/3  |
| 4     | No or minimal movement | Considerable thickening of entire leaflet (>8 mm) | Extensive brightness throughout          | Extensive thickening and shortening extending to papillary muscles |

Total possible score =16