Under multisociety consensus quality improvement guidelines [Sacks D et al. *Catheter Cardiovasc Interv* 2013], patients with the following characteristic benefit the most from mechanical recanalization:

- Patients in whom IV tPA is contraindicated or in whom IV tPA has failed or is likely to fail
- Patients with large vessel occlusion
- Very symptomatic patients
- Patients with a stroke time window out to 8 hours
- Patients with a proximal artery occlusion

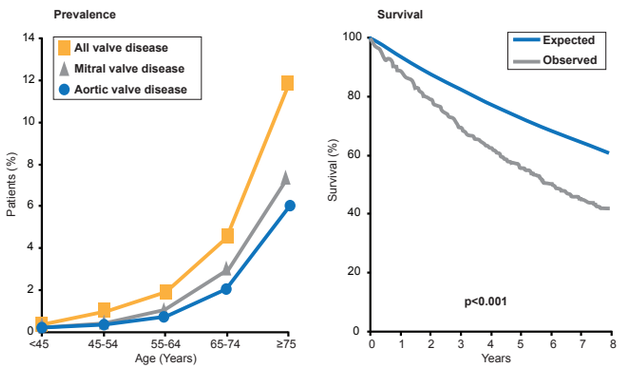
"There is only one effective treatment for ischemic stroke," said Prof. Sievert, "to get the vessel open."

Updated Guidelines for Valvular Heart Disease

Written by Maria Vinall

Valvular heart disease is not usually regarded as a major public health problem. However, the prevalence of both mitral and aortic valve disease is increasing and is particularly troublesome for individuals aged ≥75 years (Figure 1) [Nkomo VT et al. *Lancet* 2006].

Figure 1. Burden of Valve Disease



Reproduced from Nkomo VE et al. Burden of valvular heart diseases: a population-based study. *Lancet* 2006;368(9540):1005-1011. With permission from Elsevier.

European Society of Cardiology (ESC)/European Association for Cardio-Thoracic Surgery (EACTS) Guidelines on the management of valvular heart disease were updated in 2012 [Vahanian A et al. *Eur Heart J* 2012; *Eur J Cardiothorac Surg* 2012]. Fausto J. Pinto, MD, PhD, University of Lison, Lisbon, Portugal, discussed some of the major changes that resulted from new evidence regarding risk stratification, diagnostic methods, and therapeutic options.

The 2012 guidelines recommend that treatment decisions for patients with valvular heart disease be made by a "heart team" comprised of cardiologists, cardiac surgeons, imaging specialists, anesthesiologists, and others, as appropriate. The decision process should focus on disease severity, patient symptoms, the relationship of the symptoms to valvular disease, life expectancy and quality of life, whether the expected benefits of intervention outweigh the risk, the patient's wishes, and whether local resources are optimal for the planned intervention.

All patients should receive a clinical assessment and echocardiography to confirm diagnosis and to assess severity and prognosis. Exercise testing, stress echocardiography, magnetic resonance imaging, and multislice computed tomography may provide additional useful information. Cardiac catherization to evaluate valve function are necessary only if noninvasive findings are inconsistent with the clinical assessment.

Table 1. Aortic Regurgitation (Class and Level of Evidence)

Severe Aortic Regurgitation
Surgery is indicated for symptomatic patients (IB), asymptomatic patients with resting LVEF ≤50% (IB), undergoing CABG or surgery of ascending aorta (IC), and for asymptomatic patients with resting LVEF >50% with severe LV dilation (IIaC)
Surgery should be considered in asymptomatic patients with resting EF >50% with severe LV dilatation: LVEDD >70 mm, or LVESD >50 mm or LVESD >25 mm/m^2 BSA
Aortic Root Disease (regardless of aortic regurgitation severity)
Surgery is indicated for patients with maximal ascending aortic diameter ≥50 mm for patients with Marfan syndrome (IC)
Surgery should be considered for patients who have aortic root disease with maximal ascending aortic diameter: ≥45 mm for patients with Marfan syndrome with risk factors, ≥50 mm for patients with bicuspid valve with risk factors, or ≥55 mm for other patients (IIaC)

AR=aortic regurgitation; BSA=body surface area; CABG=coronary artery bypass graft; EF=ejection fraction; LV=left ventricular; LVEDD=LV end diastolic diameter; LVESD=LV end systolic diameter.

*Risk factors include family history of aortic dissection and/or aortic size increase 0.2 mm/year (on repeated measurements using the same imaging technique, measured at the same aorta level with side-by-side comparison and confirmed by another technique), severe AR or mitral regurgitation, desire of pregnancy.

Table 2. Aortic Valve Replacement (Class and Level of Evidence)

Symptomatic Aortic Stenosis
Aortic Valve Replacement is indicated in patients with severe AS and any symptoms related to AS (IB), and in patients with severe AS undergoing CABG or surgery of the ascending aorta or another valve (IC)
AVR should be considered in patients with moderate AS undergoing CABG, surgery of the ascending aorta or another valve (IIaC), and in high-risk patients with severe symptomatic AS who are suitable for transcatheter aortic valve implantation, but in whom surgery is favored by a 'heart team' based on the individual risk profile and anatomic suitability (IIaB)
AVR should be considered in patients with low flow, low gradient (<40 mm Hg) AS with normal EF only after careful confirmation of severe AS, and in patients with severe AS, low flow, low gradient with reduced EF, and evidence of flow reserve (both IIaC)
AVR may be considered in patients with severe AS low flow, low gradient, and LV dysfunction without flow reserve (IIbC)
Asymptomatic Aortic Stenosis
AVR is indicated in patients with severe AS and systolic LV dysfunction (LVEF <50%) not due to another cause (IC), and in patients with abnormal exercise test showing symptoms on exercise clearly related to AS (IC)

AS=aortic stenosis; AVR=aortic valve replacement; BSA=body surface area; CABG=coronary artery bypass graft; EF=ejection fraction; LVEF=left ventricular ejection fraction.

Table 3. Severe Primary MR (Class and Level of Evidence)

Symptomatic Patients
Mitral valve repair should be the preferred technique when it is expected to be durable (IC)
Surgery is indicated in symptomatic patients with LVEF >30% and LVESD <55 mm (IB)
Surgery should be considered in patients with severe LV dysfunction (LVEF <30% and/or LVESD >55 mm) refractory to medical therapy with high likelihood of durable repair and low comorbidity (IIaC)
Surgery may be considered in patients with severe LV dysfunction (LVEF <30% and/or LVESD >55 mm) refractory to medical therapy with low likelihood of durable repair and low comorbidity (IIbC)
Asymptomatic Patients
Surgery is indicated in patients with LV dysfunction (LVESD ≥45 mm and/or LVEF 60%; IC)
Surgery should be considered in patients with preserved LV function and new onset of atrial fibrillation or pulmonary hypertension (systolic pulmonary pressure at rest >50 mm Hg; IIaC)
Surgery should be considered in asymptomatic patients with preserved LV function, high likelihood of durable repair, low surgical risk, flail leaflet, and LVESD ≥40 mm (IIaC)
Surgery may be considered in patients with preserved LV function, high likelihood of durable repair, low surgical risk, and left atrial dilatation (volume index ≥60 ml/m² BSA) and sinus rhythm, OR pulmonary hypertension on exercise (SPAP ≥60 mm Hg at exercise; IIbC)

BSA=body surface area; LVEF=left ventricular ejection fraction; LVESD=left ventricular end systolic diameter; SPAP=systolic pulmonary artery pressure.

Table 4. PMC in Mitral Stenosis with Valve Area ≤1.5 cm² (Class and Level of Evidence)

PMC is indicated for symptomatic patients with favorable characteristics (IB) and those with contraindications or at high risk for surgery (IC)
PMC should be considered as initial treatment for symptomatic patients with unfavorable anatomy but without unfavorable clinical characteristics (IIaC)
PMC should be considered in asymptomatic patients without unfavorable characteristics and high thromboembolic or hemodynamic decompensation risks (IIaC)

PMC=percutaneous mitral commissurotomy.

Table 5. TAVI (Class and Level of Evidence)

TAVI should only be undertaken with a multidisciplinary 'heart team' including cardiologists and cardiac surgeons and other specialists if necessary, and should only be performed in hospitals with cardiac surgery onsite (both IC)
TAVI is indicated in patients with severe symptomatic AS who are not suitable for AVR as assessed by a 'heart team' and who are likely to gain improvement in their quality of life and to have a life expectancy of more than 1 year after consideration of their comorbidities (IB)
TAVI should be considered in high-risk patients with severe symptomatic AS who may still be suitable for surgery, but in whom TAVI is favored by a 'heart team' based on the individual risk profile and anatomic suitability (IIaB)

AS=aortic stenosis; AVR=aortic valve replacement; TAVI=transcatheter aortic valve implantation.

Full guidelines are available at: http://www.escardio.org/guidelines-surveys/esc-guidelines/GuidelinesDocuments/Guidelines_Valvular_Heart_Dis_FT.pdf

Stent for Life Initiative Improves Delivery of Primary PCI in Timely Manner

Written by **Mary Mosley**

The Stent for Life (SFL) program is a joint initiative to improve the delivery of and patient access to percutaneous coronary intervention (PCI) to reduce the morbidity and mortality of patients suffering from acute coronary syndromes (ACS). The founding partners in this program are the European Association of Percutaneous Cardiovascular Interventions (EAPCI), a registered branch of the European Society of Cardiology, and EuroPCR. Petr Kala, MD, Brno, Czech Republic, SFL Chairman, reviewed the objectives of Stent for Life and the three stages completed to date.

The objectives of Stent for Life Initiative are to define the regions and countries with an unmet medical need for optimal treatment of ACS, and to implement an action program to increase patient access to primary PCI where it is needed. In terms of patient access, the goals are to increase primary PCI to >70% among all patients with ST-segment elevation myocardial infarction (STEMI) and to provide 24/7 service for primary PCI at all invasive facilities to meet the needs of the STEMI population.

Phase 1 of Stent for Life comprised situation mapping and data collection during 2008 and 2009 to assess the current situation in 30 countries. Along with defining the rates of primary PCI, thrombolysis, and no reperfusion for STEMI, they found that the rates of primary PCI were not correlated to gross domestic product of the country [Widimsky P et al. *Eur Heart J* 2010]. On average, only 51% of STEMI patients arrive to the first hospital by emergency medical services (EMS), and 46% of STEMI patients were untreated despite a nationwide "thrombolytic strategy" program.

Phase II evaluated how to improve access to primary PCI based on the experience of best practice countries. Strategies found to reduce system delays included building an effective primary PCI network, strengthening the role of EMS, and decreasing transportation time. An awareness campaign called "ACT NOW. SAVE A LIFE" was created to educate public about heart attack symptoms and the need to act and call an emergency number to reduce patient delay in seeking medical treatment [Knot J et al. *EuroIntervention* 2009].

The implementation of Stent for Life from 2009 to 2013 comprised Phase 3. Currently there are 17 national cardiac societies and organizations actively involved in SFL in Europe and Asia. Prof. Kala reviewed the achievements attained in Romania, which joined SFL in 2010. Five STEMI