What is new in ACC/AHA 2017 focused update of valvular heart disease guidelines

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Rapid developments and new evidence in the field of medicine urge scientific communities to provide new guidelines. Valvular heart disease (VHD) can be considered as one of the most rapidly progressing fields of cardiology. Hence, ACC/AHA has very recently released a focused update only 3 years after the latest 2014 guidelines on VHD (1). The key changes that reflect the new advances in this update can be summarized as follows:

1- Infective endocarditis: Although limited prophylaxis is still underscored in the focused update, all implanted prosthetic materials used in transcatheter or surgical procedures for VHD are now considered to be a reasonable indication for antibiotic prophylaxis.

In patients with infective endocarditis and an indication for surgery, a delay in the procedure is deemed unnecessary unless a hemorrhagic or major embolic stroke is present. Otherwise, delaying surgery for 4 weeks may be reasonable based on non-randomized data.

2- Aortic stenosis: After two recent randomized trials hitting their noninferiority end-points, transcatheter aortic valve implantation (TAVI) has now taken its place in the focused update for patients who are deemed at an intermediate risk for surgical aortic valve replacement. Moreover, new evidence from longer term follow-up of patients with prohibitive and/or high surgical risk who have undergone TAVI has strengthened the previous recommendation favoring TAVI over surgery in this subgroup.

3- Primary mitral regurgitation: The ongoing concern over the timing of surgery for asymptomatic severe mitral regurgitation is still emphasized in this focused update on VHD. New evidence favors earlier intervention before left ventricular dysfunction develops. Hence, it is now considered reasonable to perform early intervention for patients with progressive left ventricular impairment or enlargement detected on serial imaging much before the conventional cut-offs of left ventricular end-systolic diameter of 40 mm and ejection fraction of 0.60.

4- Secondary mitral regurgitation: The previous Class IIb recommendation for isolated surgery for symptomatic and severe secondary mitral regurgitation has not changed in this update. However, in light of a recent randomized trial, the emphasis on repair versus replacement has weakened. Furthermore, chordal sparing valve replacement is now favored over repair in terms of durability. In contrast to previous guidelines, the benefit of repair for moderate ischemic mitral regurgitation in patients undergoing coronary artery bypass grafting is also questioned. Hence, routine repair surgery for these patients cannot be recommended.

5- Prosthetic valves:

a) Type of prosthesis: Previous versions of the VHD guidelines historically recommend metallic prostheses rather than biological valves in patients younger than 60 years. The new version of the guidelines now recommends taking into account the option of the future valve-in-valve procedure in decision making for an individual patient. Moreover, it is still recognized that oral anticoagulation can be accomplished in most patients under 50 years of age. In addition, there is no concern of durability in patients undergoing metallic valve replacement. Hence, the age limit for opting for a metallic versus bioprosthetic valve is now reduced to <50 years. Patients older than 70 years are still considered suitable for receiving bioprosthetic valves. The intermediate age range (i.e., 50–70 years) is a gray area, and the choice of the type of valve should be individualized.

b) Anticoagulation: Based on recent evidence of a higher risk of thrombosis of biological valves than that recognized previously, a concern was raised on the use of aspirin-only or "no" antithrombotic drug strategies early after bioprosthetic aortic valve replacement. Hence, the previous relatively complex recommendation sets for anticoagulation regimens early after biological valve replacement surgery have been simplified in the

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new focused update. Three to as long as 6 months of oral anticoagulation is now deemed the regimen of choice in patients undergoing either mitral or aortic biological valve replacement.

The new generation On-X aortic valve prosthesis has been tested in a randomized trial and has shown similar embolic complications and lesser bleeding with reduced anticoagulation. Based on these results, patients with On-X aortic mechanical valves may be considered for a reduced INR of 1.5 to 2.

The risk of leaflet thrombosis after TAVI has urged the guidelines to recommend oral anticoagulation for 3 months after the procedure with an INR target of 2 to 3. However, there is no information on the choice between dual antiplatelet therapy and anticoagulation

c) Thrombosis: Based on particular data obtained from studies using three-dimensional transesophageal echocardiography (2) and multislice computed tomography (3), multimodality imaging in suspected prosthetic valve thrombosis (PVT) is now considered as a class IB indication in the focused update.

Multiple recent nonrandomized studies have shown the efficacy and safety of low-dose and slow-infusion thrombolysis in most patients with left-sided PVT (4–6). Hence, the focused update on VHD guidelines now equally recommends urgent thrombolysis or surgery for obstructive PVT as the first-line treatment strategy. The update also provides a set of factors to be taken into account when considering one treatment modality over another.

In patients with stenotic bioprosthetic valves, thrombosis may be a major contributing factor to slowly progressing gradients. For such stable patients, the guidelines recommend initial anticoagulation for several months until the resolution of stenosis. In others with unstable hemodynamics, surgery or thrombolysis is considered reasonable.

d) Regurgitation: The transcathater valve-in-valve procedure is now considered suitable for patients with aortic bioprosthetic transvalvular regurgitation who are severely symptomatic and have a prohibitive surgical risk.

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