Depression and Mortality After Aortic Valve Replacement

Whether depression is associated with adverse outcomes in older patients undergoing transcatheter or surgical aortic valve replacement is uncertain. Drudi and coauthors prospectively assessed 1035 older adults (mean [SD] age, 81.4 [6.1] years) using the Geriatric Depression Scale Short Form before and after transcatheter or surgical aortic valve replacement. While 326 older adults (31.5%) undergoing transcatheter or surgical aortic valve replacement had a positive result of screening for depression, only 89 (8.6%) had depression documented in their clinical record. Baseline depression was associated with both 1-month and 12-month mortality in adjusted analyses, and persistent depression at 6 months was associated with a 3-fold increase in mortality at 12 months. In an Invited Commentary, Patel and Leon note the difficulty in dissociating depressive symptoms from those of aortic stenosis and the need to determine whether treatment of depression leads to improved outcomes.

Association of Heart Rate With Cardiovascular Outcomes

Heart rate (HR) is associated with outcome in patients with heart failure, but it is unclear whether HR is associated with outcomes in a community-based cohort. Vazir and coauthors assessed HR and changes in HR over time in 15 680 participants in the Atherosclerosis Risk in Communities cohort study, with follow-up of 28 years. Compared with baseline HR, the most recent HR and change in HR over a median time interval of 3.0 years were associated with all-cause death, incident heart failure, incident myocardial infarction, stroke, and cardiovascular and noncardiovascular death.

Features of Nonculprit Plaques in Acute Coronary Syndrome

The characteristics of nonculprit plaques in acute coronary syndrome caused by culprit plaque erosion compared with plaque rupture are unknown. Sugiyama and coauthors performed 3-vessel optical coherence tomography in 34 patients with acute coronary syndrome caused by culprit plaque rupture and in 17 with culprit plaque erosion. Nonculprit plaque rupture was observed in 9 of 34 patients (26%) with culprit plaque rupture but in no patients with culprit plaque erosion. Culprit plaque erosion was associated with lower prevalence of macrophage accumulation, microvessels, and spotty calcification in nonculprit lesions. Lower levels of panvascular instability in acute coronary syndrome caused by plaque erosion suggest that distinct pathophysiologic mechanisms operate in plaque erosion and plaque rupture.

Biomarkers and Ejection Fraction Subtype in Heart Failure

Biomarkers associated with incident heart failure with preserved ejection fraction (HFpEF) vs reduced ejection fraction (HFrEF) are unknown. De Boer and coauthors evaluated 12 biomarkers in 22 756 participants in 4 community-based cohorts: the Cardiovascular Health Study, the Framingham Heart Study, the Multi-Ethnic Study of Atherosclerosis, and the Prevention of Renal and Vascular End-stage Disease Study. During a median follow-up of 12 years, 633 participants (2.8%) developed incident HFpEF and 841 (3.7%) developed HFrEF. In adjusted models, incident HFpEF was associated with 2 biomarkers (urinary albumin to creatinine ratio and natriuretic peptides), whereas incident HFrEF was associated with 6 biomarkers (urinary albumin to creatinine ratio, natriuretic peptides, high-sensitivity troponin, cystatin C, D-dimer, and C-reactive protein). This underscores the need for further study of novel biomarkers for risk of HFpEF.