Top Ten Things to Know

Knowledge Gaps in Cardiovascular Care of the Older Adult Population

1. More than half of all cardiovascular (CV) hospitalizations and procedures in the US occur in people over the age of 65. While about 6% of the total population in the US are over age 75, this age group accounts for more than 50% of cardiovascular deaths.

2. With age-related changes in the CV system, along with changes in other organ systems (kidneys, liver, skeletal muscle and brain), older patients are at risk for complications related to pharmacological and nonpharmacological interventions.

3. In general, randomized clinical trials do not include the very elderly (over the age of 75 years), therefore translation of results to an elderly population remains questionable.

4. Few clinical trials have assessed outcomes important to older adults, such as quality of life, maintenance of independence and physical and cognitive function.

5. Several guidelines related to care of an elderly population were reviewed and pertinent gaps in knowledge were identified. These gaps limited the applicability of guideline recommendations to older adults, especially those older than 75 years of age and those with multimorbidity or other complexities of care (e.g. cognitive impairment, nursing home residence). Specific research recommendations for overcoming these knowledge gaps are proposed.

6. Several cardiovascular disease (CVD) states were reviewed including and recommendations to “close the knowledge gap” were suggested for each condition below:
   - ST-Elevation myocardial infarction and Non-ST-Elevation acute coronary syndromes
   - Stable ischemic heart disease, Percutaneous Coronary Intervention (PCI) and coronary artery bypass graft surgery (CABG)
   - Heart rhythm disorders (Atrial fibrillation/flutter)
   - Ventricular arrhythmias and prevention of sudden cardiac death
   - Device-based therapy for cardiac rhythm abnormalities
   - Valvular Heart Disease: such as Aortic Stenosis
   - Heart failure with reduced ejection fraction and heart failure with preserved ejection fraction (HFrEF and HFpEF)
   - Peripheral arterial disease
   - Cerebrovascular disease and stroke (acute ischemic stroke and intracerebral hemorrhage)
   - Perioperative management for noncardiac surgery

7. There is a lack of information on the impact of diagnostic and therapeutic interventions on patient-centered outcomes (e.g. ability to perform routine activities of daily living and instrumental activities of daily living), and maintenance of independence.

8. In the elderly, there is an over-emphasis on pharmacological and surgical or catheter-based interventions, with less attention given to nonpharmacological interventions such as diet, lifestyle and exercise.

9. While older patients with CVD are at increased risk for adverse outcomes (death), the absolute benefit of effective therapeutic interventions is potentially greater than in younger patients; older patients are at risk for complications from both pharmacological agents and diagnostic/therapeutic procedures.

10. The gaps outlined in this paper underscore the critical need for large population-based studies and clinical trials using novel study designs that incorporate patients-centered outcomes pertaining to older patients and to also include a broad mix of older patients typical of those seen in clinical practice.