Assessing Appropriateness of Lipid Management Among Patients With Diabetes Mellitus: Moving From Target to Treatment

Summary—Treatment of dyslipidemia with moderate-dose statins leads to improved outcomes for patients with diabetes mellitus and high to moderate cardiovascular risk. Previous performance measures focused on attainment of low-density lipid levels rather than appropriate treatment with statins. Such performance measures could lead to overtreatment with high-dose statins. Use of a performance measure that credits appropriate clinical treatment rather than only low-density lipoprotein attainment shows that almost 85% of veterans 50 to 75 years of age are receiving appropriate dyslipidemia management. However, nearly 14% of patients with diabetes mellitus but without ischemic heart disease were potentially overtreated with high-dose statins.

Conclusions—Use of a performance measure that credits appropriate clinical action indicates that almost 85% of diabetic veterans 50 to 75 years of age are receiving appropriate dyslipidemia management. However, many patients are potentially overtreated with high-dose statins.

A Pharmacist-Led, American Heart Association Heart360 Web-Enabled Home Blood Pressure Monitoring Program

Summary—Previous studies involving pharmacist- or nurse-led home blood pressure (BP) monitoring programs have demonstrated improvements in BP control. However, the applicability of previous studies to routine practice may be limited by the exclusion of patients with diabetes mellitus or chronic kidney disease, complex monitoring protocols, or the use of expensive, proprietary software to support telemonitoring. This pragmatic, randomized, controlled trial found that a pharmacist-led, Heart360-supported, home BP monitoring intervention delivered by regular clinical staff to a broadly representative patient population led to greater BP reductions, superior BP control, and higher patient satisfaction than usual care. The impact of the intervention on BP control and degree of BP lowering was even greater among the subset of patients with diabetes mellitus or chronic kidney disease. The proportions of patients with a dose increase for an antihypertensive medication or the addition of at least 1 antihypertensive medication were greater for the home BP monitoring group than for the usual care group.

Conclusions—A pharmacist-led, Heart360-supported, home BP monitoring intervention led to greater BP reductions, superior BP control, and higher patient satisfaction than UC.

Walking Impairment Questionnaire Improves Mortality Risk Prediction Models in a High-Risk Cohort Independent of Peripheral Arterial Disease Status

Summary—Subjective measures of walking capacity, such as the Walking Impairment Questionnaire, have previously been shown to be associated with cardiovascular events in patients with peripheral arterial disease. It is unclear whether this clinical tool can be applied to a broader patient population and whether it can provide information beyond established risk models. This study shows that the Walking Impairment Questionnaire is an independent predictor of all-cause and cardiovascular mortality among individuals undergoing coronary angiography, even in those without peripheral arterial disease. When added to established risk models, this questionnaire significantly improves mortality risk discrimination and reclassification. Taken together, these data suggest that simple and economical tools that correlate with exercise capacity may be able to enhance our ability to prognosticate risk.

Conclusions—All 3 WIQ categories independently predicted future all-cause and cardiovascular mortality. Importantly, we found that this subjective measure of walking ability could be extended to patients without peripheral arterial disease. The addition of the WIQ scores to established cardiovascular risk models significantly improved risk discrimination and reclassification, suggesting broad clinical use for this simple, inexpensive test.

Patterns of Emergency Medical Services Use and Its Association With Timely Stroke Treatment: Findings From Get With the Guidelines-Stroke

Summary—There is increased public awareness that time is brain. Emergency medical services (EMSs) are recognized as an effective way to transport patients quickly to the hospital. Prior studies based on data collected more than a decade ago involving some particular regions of the United States and only modest numbers of patients indicated that only about half of acute stroke patients are transported...
Evidence of Systematic Duplication by New Percutaneous Coronary Intervention Programs

Summary—Hospital percutaneous coronary intervention programs have grown rapidly since 2001, without clear evidence of improved patient access to the procedure. From 2004 to 2008, 251 new PCI programs added $2 to $4 billion in new costs to the US healthcare system without improving access to PCI. During this period, hospitals were more likely to adopt PCI if they were larger, they operated in more competitive markets, and PCI was already offered in the same market. Hospitals facing stronger Certificate of Need regulation were 40% less likely each year to adopt PCI. The methods of this study could be used to evaluate the drivers and outcomes of change in other medical technologies in US hospitals.

Conclusions—Our data show that new PCI programs were systematically duplicative of existing programs and did not help patients gain access to timely PCI. The total cost of recent US investments in new PCI programs is large and of questionable value for patients.

Barriers and Facilitators to Learning and Performing Cardiopulmonary Resuscitation in Neighborhoods With Low Bystander Cardiopulmonary Resuscitation Prevalence and High Rates of Cardiac Arrest in Columbus, OH

Summary—Residents who live in neighborhoods that are primarily African-American, Latino, or poor are more likely to have an out-of-hospital cardiac arrest (OHCA), less likely to receive cardiopulmonary resuscitation (CPR), and less likely to survive. Previous studies, using novel spatial epidemiological methods and public health datasets, have identified neighborhoods as “high-risk” and potential targets for community-based interventions. Such high-risk neighborhoods are defined as having a high incidence of OHCA and low prevalence of bystander CPR when compared to their neighbors. Once these high-risk neighborhoods are identified, the next step is to understand why residents of these neighborhoods do not receive or provide CPR. This is the first systematic study to generate hypotheses as to why residents living in the highest-risk neighborhoods are both less likely to learn and perform CPR. Qualitative methods, using focus groups, done in partnership with local community-based organizations, were used in order to understand the underlying causes for this disparity. Previous research has focused on why people do not do CPR, such as fear of doing it incorrectly, breathing into someone’s mouth, or litigation concerns. Our focus group participants cited more upstream causes that must be addressed in order to increase CPR provision in high-risk neighborhoods, such as the financial cost of CPR training, lack of information and the fear of risking one’s own life. Beyond the financial, safety and informational concerns, there are also other barriers that must be addressed if community-based CPR trainings are going to be effective in reaching this target population. Although, we have begun to build a foundation for identifying how these factors are that drive people to acquire CPR as a skill, future research will still need to be conducted to better understand how this may be similar or different in other populations.

Conclusions—The financial cost of CPR training, lack of information, and the fear of risking one’s own life must be addressed when designing a community-based CPR educational program. Using data from the community can facilitate improved design and implementation of CPR programs.
Exercise Mediates the Association Between Positive Affect and 5-Year Mortality in Patients With Ischemic Heart Disease

Summary—Positive affect has been associated with better prognosis in patients with ischemic heart disease, but the underlying mechanisms remain unclear. Identification of exercise as a possible mediating mechanism explaining the relationship between positive affect and prognosis, independent of demographic and clinical characteristics. Recommendations for effective combined physical and psychological treatment strategies in clinical practice.

Conclusions—Patients with higher levels of positive affect were more likely to exercise and had a lower risk of dying during 5-year follow-up, with exercise mediating the relationship between positive affect and mortality. Interventions aimed at increasing both positive affect and exercise may have better results with respect to patients’ prognosis and psychological well-being than interventions focusing on 1 of these factors alone.9

Influence of Cardiac Surgeon Report Cards on Patient Referral by Cardiologists in New York State After 20 Years of Public Reporting

Summary—Report cards of risk-adjusted mortality rates of individual cardiac surgeons have been publicly available in New York State since 1991. Although a survey of New York cardiologists in 1996 found that these report cards had little effect on their referral recommendations to cardiac surgeons, it is unknown whether the influence of report cards on referral behavior has changed over time. Although almost all (94%) cardiologists were aware of report cards of cardiac surgeons, the influence of the report cards on cardiologists’ referral decisions was limited, with only 25% of cardiologists reporting a moderate or substantial influence on referral decisions. The report card was not discussed with any patients by 71% of cardiologists. Only 34% of cardiologists reported that the quality of the cardiac surgeon to whom they most commonly referred was among the best available.

Conclusions—After 20 years of public reporting and almost universal awareness of cardiac surgeon report cards, in 2011, cardiologists in New York State made little use of this information and rarely discussed it with patients at the time of referral for cardiac surgery.10

High Prevalence of Hypertension Among Collegiate Football Athletes

Summary—The scientific community and general public are becoming increasingly aware of possible health risks associated with football. Professional football athletes have a higher prevalence of hypertension than would be expected for men of their same age, race, and body mass index. Collegiate football athletes have a higher prevalence of hypertension than nonfootball athletes. In the initial year of athletic participation, the prevalence of hypertension was greater among football athletes independent of BMI or other risk factors. In the final year of athletic participation, the higher prevalence of hypertension in football athletes was explained by BMI and other risk factors. Practitioners should be aware of the high prevalence of hypertension and the potential for associated cardiovascular risk in this healthy, athletic population of young men.

Conclusions—Hypertension and prehypertension were common among collegiate football athletes, and football athletes were more likely to have hypertension compared with male nonfootball athletes. This presents a potential cardiovascular risk in a young population of athletes. Strategies for increasing awareness, prevention, and treatment are needed.11

Integrated Regional Networks for ST-Segment–Elevation Myocardial Infarction Care in Developing Countries: The Experience of Salvador, Bahia, Brazil

Summary—Optimal management of ST-segment–elevation myocardial infarction (STEMI) should be based on regional networks for STEMI, integrating different level health units and supported by an efficient prehospital emergency medical service. Such networks have proved to be a step forward in overcoming real-world obstacles, reducing treatment delays, and increasing the proportion of patients benefiting from reperfusion. The literature does not report on the formation of similar networks in developing countries despite the fact that 80% of deaths and disability-adjusted life-years from cardiovascular diseases occur. Our results showed a regional network to be effective in achieving primary reperfusion rates that were comparable to those reported internationally, supporting the feasibility of developing regional STEMI networks in developing countries. A significant proportion of STEMI patients (about half in this study) initially present in community-based emergency units, which are usually under-represented in large clinical trials and most registries. Regional STEMI networks should consider local contexts and value strategies such as telemedicine to overcome geopolitical and urban/rural mobility difficulties.

Conclusions—Regional STEMI networks may be feasible in developing countries. Preliminary results showed this network to be effective, achieving primary reperfusion rates comparable with those reported internationally despite the obstacles faced.12

Selecting Antiplatelet Therapy at the Time of Percutaneous Intervention for an Acute Coronary Syndrome: Weighing the Benefits and Risks of Prasugrel Versus Clopidogrel

Summary—On average, prasugrel reduces ischemic complications after acute coronary syndromes in comparison with clopidogrel, but these benefits are offset by increased bleeding risk. Optimizing prevention of recurrent ischemic events while minimizing bleeding and costs requires careful balancing of the anticipated benefits and risks of prasugrel for each individual. We built multivariable models using the TRITON-TIMI 38 data to generate individualized predictions of patients’ predicted risk of ischemic complications (cardiovascular death, myocardial infarction, or stroke) and serious bleeding (TIMI major or minor) with prasugrel versus clopidogrel to better inform clinical decision making. We used risk predictions from these models to demonstrate how personalized data on the risks and benefits of competing antiplatelet agents might influence treatment selection among a population of patients with acute myocardial infarction.

Conclusions—The expected benefits and risks of prasugrel versus clopidogrel depend highly on patient characteristics. The use of risk models could support individualized thienopyridine selection to maximize the benefits and safety of these drugs.13

Quantifying the Effect of Cardiopulmonary Resuscitation Quality on Cardiac Arrest Outcome: A Systematic Review and Meta-Analysis

Summary—Prompt delivery of cardiopulmonary resuscitation with an emphasis on high-quality chest compressions improves survival
from cardiac arrest. The relative contributions of cardiopulmonary resuscitation components (such as chest compression rate, depth, no-flow fraction, and ventilation rate) to successful resuscitation remain unclear. We measured the relationship between key cardiopulmonary resuscitation quality parameters and clinical outcomes using a formal approach of systematic review and meta-analysis. Deeper chest compressions and chest compression rates closer to the range of 85 to 100 compressions per minute were significantly associated with improved survival from cardiac arrest. There were no significant differences in ventilation rate and no-flow fraction between survivors and nonsurvivors.

Conclusions—Deeper chest compressions and rates closer to 85 to 100 cpm are significantly associated with improved survival from cardiac arrest.14

Is Diabetes Mellitus a Heart Disease Equivalent in Women?: Results From an International Study of Postmenopausal Women in the Raloxifene Use for the Heart (RUTH) Trial

Summary—The risk of death from coronary heart disease (CHD) among people with diabetes mellitus without prior myocardial infarction, as compared with nondiabetic individuals with prior myocardial infarction, is similar. This article extends the results to the group of high-risk women, who are generally underrepresented in prior trials. Diabetic women without prior CHD are at higher risk of fatal cardiovascular disease but lower risk of nonfatal CHD and cardiovascular events compared with nondiabetic women with CHD. Diabetes mellitus is associated with an excess mortality risk in women. The risk of congestive heart failure was similar among diabetic women without CHD and nondiabetic women with CHD.

Conclusions—in the RUTH trial, diabetes mellitus was a CHD risk equivalent in women for fatal, but not nonfatal, CHD and CVD.15

References