

2015 to ring in advances in prevention, interventional procedures, heart repair

December 26 2014

Wearable technologies, possible changes to stenting practices, state legislation on energy drinks, expanded use of minimally invasive heart repair procedures, and the development of a new class of cholesterol lowering drugs are among top stories anticipated in cardiology in 2015.

Leaders from the American College of Cardiology identified the following issues likely to make the news in the new year:

Wearable technologies for health care monitoring - Wearable technologies to monitor a person's health outside their physician's office will play an increasing role in health care as these devices and software grow in sophistication and usage and medical professionals incorporate readings from the devices into office visits. The Apple Watch made the news in September. The watch can measure pulse rate and use sensors to track length and type of exercise. Paired with a new app, it can combine data from various wearable devices and share it directly with a patient's doctor. Microsoft's Band, the Fitbit and Garmin are already popular with consumers looking to better track their own health, and usage of these will grow along with innovation in this area.

Stenting practice changes - Debate and discussion will continue about the risks, benefits, and timing of complete revascularization after a [heart attack](#), an approach that could involve the practice of inserting stents in multiple arteries. Two recent clinical trials - PRAMI in 2013 and CvLPRIT in 2014 - showed patients did better if the cardiologist inserted stents to open the blockages they found in all arteries when

treating patients for a heart attack. Current guidelines, based on previous research, recommend initially treating only the blockage associated with the heart attack. Guideline writing panels will be considering the latest research on complete revascularization and other related issues.

Eligibility recommendations for athletes with heart issues - A long-awaited update to the recommendations for sports participation for young athletes with heart issues is expected as early as the first half of 2015. The report, Eligibility and Disqualification Recommendations for Competitive Athletes With Cardiovascular Abnormalities, updates the 36th Bethesda Conference report published in 2005. The document addresses recommendations for eligibility and temporary or permanent disqualification of athletes with [heart conditions](#) from participation in competitive sports. It also discusses the use of performance-enhancing substances and dietary supplements, diagnostic testing strategies, legal considerations and other topics.

Expanded use of minimally invasive heart repair procedures - An alternative to open heart surgery, transcatheter aortic valve replacement, has been available in the United States for inoperable patients since 2011 and for high-risk patients since 2012. The procedure involves inserting a new valve into the heart using a catheter inserted into an artery to replace a heart valve that has narrowed - a life-threatening condition called aortic stenosis. A similar procedure was approved in 2013 for the MitraClip, a device designed to repair a leaky heart valve, a condition called mitral valve regurgitation. So far, these new heart repair options are only available for high risk patients, including those considered too frail for surgery. All the patients receiving these treatments have been followed in a national data registry. As information about patients receiving these treatments is reviewed by regulators and physicians, these minimally invasive treatments may be considered for use in more patients. Additional devices for repairing other heart conditions are likely to follow.

Another novel anticoagulant - The FDA is expected to make a decision on whether to approve edoxaban in early 2015. This would be the fourth drug on the market as an alternative to warfarin, which for decades was widely prescribed for patients to prevent strokes due to atrial fibrillation. Warfarin is effective for stroke prevention, but has difficult side effects and requires close monitoring to maintain a safe but effective dosage. An FDA advisory panel recommended approval of edoxaban in October. Atrial fibrillation is the most common heart rhythm disorder and affects more than 2.5 million people in the United States, with the number expected to continue to grow as the population ages.

PCSK9 inhibitors - The race will continue to bring to market this new class of cholesterol-lowering medications. PCSK9 inhibitors are an experimental class of drugs that have been shown to dramatically lower levels of low-density lipoprotein (LDL), known as "bad" cholesterol, especially in patients with unusually high blood cholesterol levels that don't respond to other treatments. Amgen filed for Food and Drug Administration (FDA) approval of its PCSK9 inhibitor, evolocumab, in August, and Sanofi/Regeneron announced plans to seek priority review of its drug, alirocumab. This means the first FDA decision on this new class could come as early as summer of 2015. Meanwhile, results of research related to PCSK9 inhibitors will continue to be released as drug makers vie to make their drug the first available to patients with a genetic disposition to extremely high "bad" cholesterol.

Diet and exercise aren't just for prevention - The cardiovascular team will expand its focus on lifestyle management as a tool for reversing cardiovascular disease as well as for prevention. Research has shown that comprehensive, exercise-based cardiac rehabilitation reduces mortality rates in patients after myocardial infarction. Diet and physical activity both prevent and help treat many established atherosclerotic risk factors, including elevated blood pressure, insulin resistance and glucose intolerance, elevated triglyceride concentrations, and obesity. Exercise in

combination with weight reduction can decrease low-density lipoprotein (LDL) or cholesterol.

Team-based care - As the concept of team-based care continues to grow, state legislatures are likely to weigh in on issues of training adequacy, reimbursement, and patient safety. Increasingly, cardiology and other specialties are using physician-led, team-based, care models. This approach seeks to foster collaboration and leverage each team member's unique skills, knowledge and training.

Energy Drinks - Legislation is likely to emerge at a state level to address the growing abuse of [energy drinks](#) among children and scholastic athletes. Emergency rooms have reported an increase in visits from young people complaining of irregular and increased [heart](#) rates, acute anxiety and sleep deprivation. Currently available research is inadequate to assess the long-term damage energy drinks may cause, but many in the medical community believe that the increased number of children who visit their offices and emergency rooms after consuming energy drinks merits changes in public policy aimed at reducing consumption by minors. Bills introduced in several states in recent years, especially addressing sales and marketing to children, are likely get attention as they move through the legislative process.

Provided by American College of Cardiology

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