

Evidence-Informed Scientific Advances on Cardiovascular Medicine and Surgery: Implications for the Journal of Cardiovascular Medicine and Surgery

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Abstract

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This editorial aimed to provide an overview of recent scientific advances in the field of cardiovascular medicine and surgery (CVMS) and implicate evidence-informed role for the Journal of Cardiovascular Medicine and Surgery (JCVMS). Cardiovascular disorders were associated with higher mortality rate; practice-based evidence for perioperative and postoperative antibiotic therapy in cardiac surgery; efficacy of surgical septal myectomy for obstructive hypertrophic cardiomyopathy; role of regenerative medicine and stem cell transplantation in CVMS; professional associations and societies' guidelines and recommendations for indications for coronary angiography and coronary revascularization surgeries, and diagnostic catheterization. Amidst the emerging scientific developments, there is still a huge demand for establishing evidence, which should be exploited well by JCVMS.

Keywords: Evidence-Informed Cardiovascular Medicine and Surgery; Cardiothoracic Science; Cardiothoracic Research; Evidence-Based Practice.

This editorial aimed to provide an overview of recent scientific advances in the field of cardiovascular medicine and surgery (CVMS) and implicate evidence-informed role for the Journal of Cardiovascular Medicine and Surgery (JCVMS).

Hrubec and Ryder [1] studied military men with service-connected traumatic limb amputations for mortality risk factors and found that ischemic heart disease and other cardiovascular diseases was associated with excess mortality in their report to the Veterans' Administration Department of Medicine and Surgery.

Markewitz et al [2] studied the current practice of perioperative and postoperative antibiotic therapy in cardiac surgery as part of the report of the Working Group on Cardiothoracic Surgical Intensive Care Medicine of the German Society for Thoracic and Cardiovascular Surgery, and provided information on choice of drugs used as well as their dosage, homogeneity and duration of antibiotic prophylaxis, time and/or reason for changing regimen, drugs used for first, second, and third-line empiric postoperative antibiotic treatment, and homogeneity of antibiotic usage.

Maron et al [3] described the benefits of surgery (surgical septalmyectomy) in obstructive hypertrophic cardiomyopathy (HCM), a heterogeneous genetic heart disease as it abolished impedance to LV outflow and heart failure-related symptoms, restored self-reported quality of life, and was associated with long-term survival similar to that in the general population.

Masumoto and Sakata [4] explained the improving role of regenerative medicine for treatment of severe cardiovascular diseases that are resistant to conventional therapies. The type (e.g., pluripotent stem cells, bone marrow-derived stem cells, skeletal myoblasts, or cardiac stem cells), method of transplantation (Scaffold-free cell sheet transplantation), engraftment and other related therapies such as interspecific chimera technology, drug delivery systems using biodegradable materials, and gene therapy play a large part in augmenting the armamentarium of cardiovascular surgery.

The Swiss Society of Cardiology, Swiss Society of Internal Medicine, and, Swiss Society of Thoracic and Cardiovascular Surgery described the indications for coronary angiography [5] and coronary revas-

cularization surgeries (percutaneous transluminal coronary angioplasty-PTCA and coronary artery bypass grafting-CABG) [6] in 1997 and 1999 respectively through an expert panel consensus.

American College of Cardiology Foundation Appropriate Use Criteria Task Force Society for Cardiovascular Angiography and Interventions American Association for Thoracic Surgery, American Heart Association, American Society of Echocardiography American Society of Nuclear Cardiology Heart Failure Society of America Heart Rhythm Society, Society of Critical Care Medicine Society of Cardiovascular Computed Tomography Society for Cardiovascular Magnetic Resonance Society of Thoracic Surgeons (ACCF/SCAI/AATS/AHA/ASE/ASNC/HFSA/HRS/SCCM/SCCT/SCMR/STS) provided evidence-based recommendations for appropriate use criteria for diagnostic catheterization [7, 8]. The recommendations included; "many indications focused on the performance of coronary angiography for the detection of coronary artery disease with other procedure components (e.g., hemodynamic measurements, ventriculography) at the discretion of the operator. The majority of the remaining indications focused on hemodynamic measurements to evaluate valvular heart disease, pulmonary hypertension, cardiomyopathy, and other conditions, with the use of coronary angiography at the discretion of the operator".

Cardiovascular disorders were associated with higher mortality rate; practice-based evidence for perioperative and postoperative antibiotic therapy in cardiac surgery; efficacy of surgical septalmyectomy for obstructive hypertrophic cardiomyopathy; role of regenerative medicine and stem cell transplantation in CVMS; professional associations and societies' guidelines and recommendations for indications for coronary angiography and coronary revascularization surgeries, and diagnostic catheterization. Amidst the emerging scientific developments, there is still a huge demand for establishing evidence, which should be exploited well by JCVMS.

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American Heart Association, American Society of Echocardiography, American Society of Nuclear Cardiology, Heart Failure Society of America, Heart Rhythm Society, Society of Critical Care Medicine,

Society of Cardiovascular Computed Tomography, Society for Cardiovascular Magnetic Resonance, and Society of Thoracic Surgeons. J Am Coll Cardiol. 2012; 59(22): 1995-2027.

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