View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by Elsevier - Publisher Connector

3. Maron BJ, Maron MS, Semsarian C. Genetics of hypertrophic cardiomyopathy after 20 years: clinical perspectives. J Am Coll Cardiol 2012;60:705–15.

4. Das KJ, Ingles J, Bagnall RD, Semsarian C. Determining pathogenicity of genetic variants in hypertrophic cardiomyopathy: importance of periodic reassessment. Genet Med 2014;16:286–93.

5. Maron BJ, Ommen SR, Semsarian C, Spirito P, Olivotto I, Maron MS. Hypertrophic cardiomyopathy: present and future, with translation into contemporary cardiovascular medicine. J Am Coll Cardiol 2014;64:83–99.

Hospitalizations for Endocarditis in the United States

The paper by Pant et al. (1) and the editorial by Dayer and Thornhill (2) provided further insight into the recent pattern of endocarditis hospitalizations in the United States, and the potential causes behind the changes. However, we have several concerns about the paper and the associated editorial. Whereas Pant et al. (1) declared, "There is scant data on IE trends since this major practice change in the United States," we had published an article in the *Journal* on the same topic in 2013 (3), which was unfortunately missed by Pant et al.

Further, Pant et al. (1) provided subgroup results stratified by the potential causative organisms. However, although potentially interesting, the limitations of this analysis need highlighting. As appropriately indicated by Dayer and Thornhill (2), the codes used by Pant et al. (1) are likely inadequate for diagnosing organisms. Although using discharge diagnosis codes for endocarditis has been previously validated against the Duke criteria (4,5), we are unaware of validation studies for organism codes used by Pant et al. (1). Whereas they show an increase in staphylococcal and streptococcal endocarditis, it is unclear whether it is due to better diagnostics, change in the coding patterns, double counting the same patients, a real surge in disease occurrence, or a mix of these. The fact that there has been an increase in gram-negative, staphylococcal, streptococcal, and fungal endocarditis raises our suspicion for better diagnostics, or change in coding patterns; at least as partial contributors.

We should also clarify that the study by Pant et al. (1), similar to ours, was not a study of true incidence, but one that determined the hospitalization rates. Our study is also misrepresented in the editorial by Dayer and Thornhill (2). They state: "Bikdeli et al. looked at admissions of patients older than 65 years by using Medicare inpatient Standard Analytic Files. They recorded a reduction in the absolute numbers, but no correction was made for the absolute numbers of patients enrolled in Medicare eligible for treatment." We are surprised by this comment, because as could be inferred from our paper, even the title, we had determined the trends in hospitalization *rates*, not merely number of hospitalizations.

Behnood Bikdeli, MD
Yun Wang, PhD
***Harlan M. Krumholz, MD, SM**

*Center for Outcomes Research and Evaluation (CORE)
Yale University School of Medicine
1 Church Street, Suite 200
New Haven, Connecticut 06510
E-mail: harlan.krumholz@yale.edu

http://dx.doi.org/10.1016/j.jacc.2015.06.1353

Please note: Dr. Krumholz has received grants, through Yale University, from Medtronic, Johnson & Johnson (Janssen), and United Health. Drs. Wang and Bikdeli have reported that they have no relationships relevant to the contents of this paper to disclose.

REFERENCES

1. Pant S, Patel NJ, Deshmukh A, et al. Trends in infective endocarditis incidence, microbiology, and valve replacement in the United States from 2000 to 2011. J Am Coll Cardiol 2015;65:2070–6.

2. Dayer M, Thornhill M. Antibiotic prophylaxis guidelines and infective endocarditis: cause for concern? J Am Coll Cardiol 2015;65:2077–8.

3. Bikdeli B, Wang Y, Kim N, Desai MM, Quagliarello V, Krumholz HM. Trends in hospitalization rates and outcomes of endocarditis among Medicare beneficiaries. J Am Coll Cardiol 2013;62:2217–26.

4. Fedeli U, Schievano E, Buonfrate D, Pellizzer G, Spolaore P. Increasing incidence and mortality of infective endocarditis: a population-based study through a record-linkage system. BMC Infect Dis 2011;11:48.

5. Schneeweiss S, Robicsek A, Scranton R, Zuckerman D, Solomon DH. Veteran's affairs hospital discharge databases coded serious bacterial infections accurately. J Clin Epidemiol 2007;60:397–409.

REPLY: Hospitalizations for Endocarditis in the United States

We would like to thank Dr. Bikdeli and colleagues for their interest in our paper (1). We do apologize for not citing the work by Bikdeli et al. (2) on the trends in hospitalization rates and outcomes of endocarditis among Medicare beneficiaries (1). The difference in results seen in our paper from the Bikdeli et al. (2) paper could be because of differences in study population and follow-up duration. We acknowledge the potential limitation related to coding that could influence the results of our study as well as other retrospective studies done on this topic, as pointed out by Bikdeli et al. (2). Hence, the conclusions made from the observational studies should be considered as "hypothesis generating" and not a "causal relationship." Prospective studies providing insight into the impact of the guideline is indeed lacking, and we have echoed the dire need for such study, which has been emphasized in the accompanying editorial by Dayer and Thornhill (3). Nonetheless, a common

theme that can be derived from our study and the study by Bikdeli et al. (2) is that the burden of infective endocarditis hospitalization rates in the United States is high and rising, which ultimately confers to higher health care expenditure and morbidity. Hence, a multispecialty collaborative effort is needed to understand the factors responsible and identify the strategies to halt this rising trend. We believe that the ongoing monitoring of the impact of the prophylaxis guidelines and appropriate updates on the basis of such data is an essential step in this regard.

Sadip Pant, MD
Abhishek Deshmukh, MD
Apurva Badheka, MD
***Jawahar L. Mehta, MD, PhD**

*Division of Cardiology
University of Arkansas for Medical Sciences
4301 West Markham Street
Little Rock, Arkansas 72205
E-mail: MehtaJL@uams.edu

http://dx.doi.org/10.1016/j.jacc.2015.07.071

Please note: The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

REFERENCES

1. Pant S, Patel NJ, Deshmukh A, et al. Trends in infective endocarditis incidence, microbiology, and valve replacement in the United States from 2000 to 2011. J Am Coll Cardiol 2015;65:2070–6.

2. Bikdeli B, Wang Y, Kim N, Desai MM, Quagliarello V, Krumholz HM. Trends in hospitalization rates and outcomes of endocarditis among Medicare beneficiaries. J Am Coll Cardiol 2013;62:2217–26.

3. Dayer M, Thornhill M. Antibiotic prophylaxis guidelines and infective endocarditis: cause for concern? J Am Coll Cardiol 2015;65:2077–8.

How to Control Residual Risk During the Statin Era?

The Schwartz et al. (1) paper reported that among patients with acute coronary syndrome treated effectively with statins, fasting triglycerides (Tg) predict long-term and short-term cardiovascular risk. Triglyceride-rich lipoproteins may be an important additional target for therapy (1).

Lowering low-density lipoprotein cholesterol (LDL-C) is the primary target in the management of dyslipidemia in patients at high risk of cardiovascular disease. However, patients who have achieved LDL-C levels below the currently recommended targets may still experience cardiovascular events. This may result, in part, from elevated Tg levels (2). Atherogenic dyslipidemia, characterized by high Tg, low levels of high-density lipoprotein cholesterol (HDL-C), and small, dense LDL particles, is a typical phenotype of dyslipidemia in subjects with insulin resistance and metabolic syndrome. On the other hand, raised Tg concentrations are strongly associated with low concentrations of HDL-C, and the past 15 years have been dominated by HDL research, with less focus on Tg. However, the understanding from genetic studies and randomized trials that low HDL-C might not be a cause of cardiovascular disease as originally thought has generated renewed interest in raised Tg (3). Indeed, a study investigated the causal role of HDL-C and Tg using multiple instrumental variables for Mendelian randomization and reported that the genetic findings supported a causal effect of Tg on coronary heart disease risk (4).

It is obvious that statins are the first-line drug for the treatment of dyslipidemia. However, a strategy to reduce high Tg and modify the small, dense LDL particles is required. In this regard, statin-based combined with fibrates, peroxisome proliferator-activated receptor agonists may be recommended in addition to therapeutic lifestyle changes if patients still experience cardiovascular events. The cost effectiveness of these combinations should also be evaluated (5).

***Kwang Kon Koh, MD, PhD**

*Vascular Medicine and Atherosclerosis Unit
Department of Cardiovascular Medicine
Gachon University
Gil Medical Center
774 Beongil 21
Namdongdaero, Namdong-Gu, Incheon
South Korea
E-mail: kwangk@gilhospital.com

http://dx.doi.org/10.1016/j.jacc.2015.07.072

Please note: Dr. Koh has reported that he has no relationships relevant to the contents of this paper to disclose.

REFERENCES

1. Schwartz GG, Abt M, Bao W, et al. Fasting triglycerides predict recurrent ischemic events in patients with acute coronary syndrome treated with statins. J Am Coll Cardiol 2015;65:2267–75.

2. Lim S, Park YM, Sakuma I, Koh KK. How to control residual cardiovascular risk despite statin treatment: focusing on HDL-cholesterol. Int J Cardiol 2013;166:8–14.

3. Nordestgaard BG, Varbo A. Triglycerides and cardiovascular disease. Lancet 2014;384:626–35.

4. Holmes MV, Asselbergs FW, Palmer TM, et al. Mendelian randomization of blood lipids for coronary heart disease. Eur Heart J 2014;36:539–50.

5. Lim S, Oh PC, Sakuma I, Koh KK. How to balance cardiorenometabolic benefits and risks of statins. Atherosclerosis 2014;235:644–8.