Beta-Blockers in Elderly Patients With Heart Failure
Ready for Prime Time?

We congratulate Hernandez et al. (1) for this important paper on the prognostic impact of beta-blockers in elderly community patients with heart failure (HF). The current evidence suggests beta-blocker use beyond any doubt but in rather limited patient populations (2). Large-scale randomized trials primarily included white male subjects with left ventricular systolic dysfunction due to ischemic heart disease, whereas the guidance in elderly patients or those with preserved left ventricular systolic function is less robust (2,3). Hence, guidelines implementation in eligible patients is unsatisfactory (4) and largely driven by patient age and left ventricular function (5).

Although beta-blockers have gained an indisputable status in patients with HF, it remains unclear whether we should pursue target doses in the elderly population or whether clinical benefit could be gained with lower doses. Previous epidemiological studies demonstrated failure to reach titration than dictated by major trials. Whether up-titration of beta-blockers via heart failure with carvedilol in daily practice: the SATELLITE survey experience. Int J Cardiol 2007;122:149–55.

Stainless Steel Stents and Magnetic Resonance Imaging
Looking Into a Black Hole

We commend Thanopoulos et al. (1) for their complete follow-up of 46 adult patients undergoing aortic stenting for both native and recurrent coarctation of the aorta (CoA). Although endovascular stenting is the treatment of choice in many centers for CoA in older children and adults, there have been no complete longer-term follow-up studies evaluating stent durability, stenosis, and aneurysm formation, and this study adds some reassuring data to the published reports. However, we have concerns about the use of magnetic resonance imaging (MRI) after implantation of stainless steel stents (Palmaz stents, Johnson and Johnson International Systems, Warren, New Jersey) to evaluate stent integrity and effects on the aortic wall. There have been numerous reports demonstrating almost complete loss of signal with stainless steel stents both ex vivo and in vivo when imaging with magnetic resonance, leading to significant image arte-
facts and obscuring of the vessel lumen (2–4). These artefacts are most problematic with steady state free precession (SSFP) and gadolinium angiography. Typical metallic stent artefact on MRI causes signal dropout due to magnetic susceptibility and radiofrequency shielding. Magnetic susceptibility scrambles the phases of individual spins leading to signal void, which is almost complete with stainless steel—particularly when compared with other alloys such as nitinol and platinum (2). Radiofrequency shielding refers to current induced in the stent wall that opposes the original magnetic field and leads to reduction in overall signal. This current increases with the resonance frequency, and thus shielding becomes more pronounced with high field strengths used in clinical imaging. Thus, MRI is not equipped to identify in-stent stenosis or aneurysm formation, and indeed lack of signal might give falsely reassuring appearances within the vessel lumen.

The authors used multislice computed tomography at the end of their 5-year follow-up, and we feel this imaging modality is not susceptible to the same artefact and signal loss as MRI (5). Although the authors did not demonstrate aortic aneurysm formation in their series, other larger albeit less complete series have demonstrated aneurysm formation of up to 9% (6), and this might have been missed with MRI, leading to potentially serious consequences. Indeed most aneurysm formation secondary to stenting is likely to occur soon after the procedure, and thus a 5-year delay for accurate imaging might lead to unnecessary patient risk. The magnetic resonance scanning, although safe, is expensive; thus to ensure both clinically relevant and cost-effective follow-up of patients undergoing aortic stenting in the setting of CoA, we suggest early (3 months) post-procedural computerized tomography imaging. Some might argue a significant radiation load accompanies this form of imaging; however, with limited scan length, non-electrocardiogram gating, and use of tube modulation to reduce unnecessary current, it is possible to ensure that this is kept to a minimum.

**REFERENCES**


**Reply**

We fully agree with the comments of Dr. Kenny and colleagues. Multislice computed tomography (MSCT) is currently the noninvasive imaging modality of choice for the evaluation of patients with coarctation of the aorta (CoA) after stent implantation. Indeed, this technique provides detailed 3-dimensional anatomic images not only of the aorta but also of the coronary arteries, which is of great importance for adult patients with CoA. In addition, accurate measurements of the aortic diameters at the stented segment can be obtained with this imaging modality. A major limitation of this technique is the significant radiation exposure—which, however, will be lowered in the not-so-far future with the newer 256 MSCT devices.

Magnetic resonance imaging (MRI) is of limited value in CoA after stent implantation, because the stent-related “shielding” artifacts prevent detailed evaluation of the aorta within the stented aortic area. In our study (1), MRI angiography was used for patient evaluation before the intervention and at follow-up for the evaluation of the intervention result when MSCT was not available and also for the assessment of the brain circulation (circle of Willis). We currently use MSCT to identify stent fractures and in-stent restenosis and to evaluate the effects of intervention on aortic wall at 1 month and 2 and 5 years after stent implantation for adult CoA.

*Basil (Vasilios) Thanopoulos, MD, PhD*
Nicholaos Eleftherakis, MD
Konstadinos Tzanos, MD
Ioannis Skoularigis, MD
Filippos Triposkiadis, MD

*Department of Pediatric Cardiology*
“Aghia Sophia” Children’s Hospital
Thivon and Levadias Street
Athens 115 27
Greece
E-mail: thanopoulos.d@gmail.com or vthanop@otenet.gr

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**REFERENCE**


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**Clarification and Correction About the Design and Implementation of the PROSPECT Trial**

In his commentary in the May 26, 2009, issue of the *Journal*, Sanderson (1) makes assertions about the design and implementation...