

Acute right ventricular myocardial infarction: a very specific entity

It was a pleasure to read the recent electrocardiographic report on ST-segment changes (1). Indeed, one of the features of electrocardiograms indicating that the right coronary artery, rather than the left circumflex artery, is the culprit is ST-segment depression in lead I. The first author who underlined ST-segment depression in lead I was J. Willis Hurst (2). We also had a similar observation (3, 4). In addition, we described right ventricular (RV) acute myocardial infarction (AMI) “in extension” (5). Recurrent AMI within 10 days of inferior wall AMI is considered to be RV AMI “in extension” only if ST-segment elevation ≥ 1 mm in V_4R is present as well as hypotension and/or bradycardia but RV AMI is absent at admission. RV AMI “in extension” may be the result of proximal thrombus extension or spasm (6). Heparin-rebound phenomenon contributes to such a scenario (7).

The term RV AMI reflects a syndrome of manifest or impending hypotension-bradycardia syndrome in patients with left ventricular (LV) AMI, capable of rapid progression into overt cardiogenic shock and/or the most dangerous rhythm and conduction abnormalities, which may result in death. In nearly all patients, RV AMI occurs together with inferior wall LV AMI. Isolated RV AMI accounts for <3% of all cases of RV AMI (8). Therefore, we believe that the term *biventricular AMI* is more appropriate. In addition, RV dysfunction in the setting of inferior wall LV AMI is predominantly due to stunned myocardium (9–16). In one study of 27 patients, of the total number of RV segments analyzed, 69% were detected as stunned (16).

Bowers et al suggest that the term RV infarction is largely a misnomer, because acute ischemic RV dysfunction appears to represent predominantly viable myocardium that responds favorably to reperfusion (17). This relative resistance of the RV wall to irreversible ischemic damage during right coronary artery occlusion seems to be due to a better oxygen supply/demand ratio (18). Oxygen needs are less in the RV wall because of lower afterload (10) and less myocardial mass (18) than in the LV wall. The oxygen supply of the RV wall during right coronary artery occlusion is not always completely ceased due to the following possibilities:

- The anterior RV wall is supplied from the left anterior descending artery.
- Collaterals toward the RV wall are usually better (11, 19).
- Systolic compression of coronary arteries by RV myocardium is less, allowing flow also in systole (11).
- Transmural perfusion pressure is more homogeneous (11).
- Oxygen is directly extracted from the blood in the RV cavity (10, 15).

As far as the term is concerned, it is better not to divide it into subgroups with ST elevation and without ST elevation, because ST elevation in V_4R is the main diagnostic criterion. In

contrast to LV AMI, no categorization as AMI with or without abnormal Q waves has been made for RV AMI.

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Guinness: “Facts and ideas,” January 2007

A lot of interesting information appears in Dr. William Roberts' column, “Facts and ideas from anywhere,” in the January 2007 edition of the *Baylor University Medical Center Proceedings*. But I have a small quibble with the first sentence of the section titled “Trust.” In it he attaches the name Alex Guinness to the Guinness brewery of Dublin, Ireland. There may have been a Guinness named Alex involved with that firm, but its founder and major mover was Arthur Guinness (September 1725–January 1803). Dr. Roberts also identifies Alex Guinness as “the beer mogul of the United Kingdom.” The Guinness brewery was established and remains in Dublin, the capital of the Republic of Ireland and defiantly not part of the United Kingdom. Although Guinness has branches in other parts of the world, I doubt the company's

influence on the UK beer market would have made Arthur Guinness or even Alex Guinness if he exists “the” beer mogul there. The world records book was first published by Guinness in 1955 and was the brainchild of Sir Hugh Beaver, who was heading up Guinness in that era. It has set its own records for sales ever since.

The name Alex Guinness may come to mind owing to the fame of the excellent British actor, Sir Alec Guinness (April 1914–August 2000).

—KEITH NICHOLS
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DR. ROBERTS REPLIES:

Thank you for the correction.

A compliment

I have never written a letter to the editor before and have no real reason to do so now. I just want to. I am not connected to Baylor (or medicine) in any way except that I brought a patient to the Baylor Dallas campus today. I found a copy of Volume 20, Number 1, January 2007 of *Baylor University Medical Center Proceedings* and have read more than half of it. I find it interesting, open minded, objective, and very well done. My guess is that you and the authors you allow to publish in *Proceedings* have good sense in addition to good medical skills. Both are important to patients and community.

—DON BUTCHER
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We always welcome feedback from our readers. Please send your comments to Cynthia Orticio, managing editor, Baylor Scientific Publications Office, 3500 Gaston Avenue, Dallas, Texas 75246 or via e-mail at cynthiao@BaylorHealth.edu.
