of scaled equations and specific pediatric equations and between the different pediatric equations. Further work is required to resolve these differences and to move towards a universally agreed standard set of equations.

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Prognostic Value of Thallium-201 Re-Injection

TO THE EDITOR: The recent article by Petretta et al. (*1*) addresses an important issue regarding the possible incremental prognostic value of ^{201}Tl re-injection after standard stress-redistribution imaging. This is an interesting study with potentially important value. However, I feel that the current analysis leaves one with more questions than it answers.

It is now well-established that some fixed stress perfusion defects on standard redistribution imaging appear to be reversible with re-injection imaging. In addition, it has been demonstrated that myocardial segments corresponding to these defects have significant myocardial viability based on metabolic imaging and regional wall motion response to revascularization. However, the prognostic implications of such phenomenology has been unproven. While defects that show reversibility on standard redistribution imaging have clearly been shown to have important prognostic value (*2*), the vast majority of studies have demonstrated that defects which are fixed on standard redistribution imaging do not have significant prognostic implications (*2*). As the authors point out, prior studies have in fact suggested that defects that are fixed on standard redistribution imaging which become reversible with re-injection imaging also do not have significant prognostic value (*3,4*). Although the authors conclude in their current study (*1*) that the re-injection imaging has significant incremental prognostic value when added to standard stress-redistribution imaging, their methodology does not really address the issue of whether additional reversibility demonstrated by re-injection has significant prognostic value. In addition, their selection of variables to be tested is biased against standard stress-reduction imaging.

Petretta et al. (*1*) chose to use the following ^{201}Tl re-injection variables: (1) the sum of defects which are irreversible after redistribution that show reversibility with re-injection or that remained irreversible but are only moderate in severity; and (2) the number of severe fixed defects after re-injection. However, the standard ^{201}Tl stress-redistribution variables included only the number of reversible defects, persistent defects and lung-to-heart ratio. It did not include the sum of reversible defects plus moderate fixed defects (analogous to the re-injection variable). Thus, one cannot determine whether in fact the detection of reversibility with re-injection in defects that were otherwise fixed with standard stress-redistribution imaging has any significant prognostic value. In addition, if the presence of moderate fixed defects has any significant prognostic value, then the analysis is biased against standard stress-redistribution imaging which does not include this variable for analysis. One is curious as to why this component was lumped with new reversible defects with re-injection imaging, since although moderate fixed defects may have important implications regarding the presence of viable myocardium and improvement in regional wall motion following revascularization, they have not been demonstrated to have prognostic value for future cardiac deaths or myocardial infarction. One suspects that perhaps new reversible defects with re-injection did not have significant incremental prognostic value by itself.

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REPLY: We thank Dr. Brown for his interest in a recently published study in *The Journal of Nuclear Medicine* (*1*). This study addresses whether the detection of viable myocardium in patients with chronic coronary artery disease and left ventricular dysfunction, as assessed by thallium reinjection imaging, adds incremental prognostic information to the results of conventional stress-redistribution scintigraphy. We think that our results support this hypothesis.

We agree with Dr. Brown's observation that exercise defects showing reversibility on standard stress-redistribution thallium imaging have important prognostic value (*2*). Also in our study, the presence of redistribution on delayed images gives incremental prognostic information to clinical and exercise stress-test data (*1*). We do not agree with the concept that fixed thallium defects on standard exercise-redistribution imaging do not have significant prognostic implications. In fact, it has been recently demonstrated that the total extent of exercise thallium SPECT defects and the extent of irreversible thallium SPECT defects were significant predictors of major cardiac events and cardiac deaths in 217 patients with known or suspected coronary artery disease and a mean follow-up period of 70 ± 19 mo (*3*). These findings confirm the results of previous studies with shorter follow-up (*4,5*). Furthermore, Marie et al. (*3*) showed that the extent of reversible exercise defects is significantly related to the occurrence of major ischemic events, but not to cardiac death.

In response to the observation that preliminary previous studies suggested that fixed defects on standard stress-redistribution thallium imaging which became reversible after reinjection do not have significant prognostic value (*6,7*), there are some important points that should be highlighted. Zafrir et al. (*6*) included consecutive patients with coronary artery disease and not only patients with previous myocardial infarction and left ventricular dysfunction (i.e., those patients in whom thallium reinjection imaging is clinically relevant). Furthermore, in Pieri et al.'s (*7*) study the number of viable segments was not related to the outcome. Nevertheless, the number of fixed defects at stress-redistribution thallium scintigraphy that remained fixed after reinjection was the strongest predictor of hard events (*7*). This latter study, however, included patients with previous myocardial infarction but preserved left ventricular function. The criteria used for patient selection and the analysis performed (i.e., quantitative versus qualitative)