Stress echocardiography compared to exercise ECG for the assessment of acute coronary syndrome

We have read with interest the article by Jeetley et al. on the comparison of the clinical and economic impact of stress echo and exercise ECG for the assessment of acute coronary syndrome in patients with normal troponin. They showed that the cost of the exercise ECG approach was higher, mainly because of the higher performance of angiographies in this group (33 vs. 19%), which matches with the risk stratification achieved by each approach (intermediate or high risk by exercise ECG, 67%; by stress echo, 23%). In spite of this higher number of angiographies in the exercise ECG group, outcome was similar and revascularization procedures were the same (15 vs. 13, data from Figure 3). One might suspect that a significant number of angiographies in the exercise ECG intermediate-risk patients did not translate into revascularization procedures. We have performed a similar study in patients after acute myocardial infarction. In our study ischemia was more frequently detected by exercise echo than by exercise ECG (59 vs. 27%, P < 0.001) and therefore the number of angiographies and revascularization procedures were higher in the former group (59 vs. 32 angiographies, P < 0.01 and 46 vs. 19 revascularizations, P < 0.001). The percentage of re-admissions for unstable angina, heart failure, and myocardial infarction after a follow-up of 4.5 ± 1.8 years was the same. There were 17 hard cardiac events (non-fatal myocardial infarction or cardiovascular death) in the exercise ECG strategy and 19 in the exercise echo strategy (21 vs. 23%). Thus, the performance of angiographies particularly after exercise ECG likely reflects different post-test referral patterns among centres. A more conservative referral pattern for the exercise ECG group in the study by Jeetley et al. (i.e. only angiography in the high risk group) would likely equal the number of angiographies within groups (and the cost). If this approach would translate into similar outcome deserve further studies.

References


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SE is likely to be more cost-effective. Because of its significant superior specificity compared with ExECG, SE will be able to identify correctly the low-risk group in a low-intermediate risk population like our study demonstrated and because of its superior sensitivity, SE will correctly identify high-risk group in a population which is intermediate-high risk such as those studied by Peteiro et al. However, one must remember that the effectiveness of the test should take into account the life lost if flow-limiting CAD is missed. One study that took this into account did demonstrate that SE is more cost-effective than ExECG, albeit, in a chronic setting.4

Targeted stent use in clinical practice based on evidence from the Basel Stent Cost Effectiveness Trial (BASKET)

We read with great interest the accurate retrospective analysis of the database of the BASKET trial, performed by Brunner-La Rocca et al. with the purpose to find patient/vessel characteristics predictive of future events.
In particular, we welcome the interesting finding of a potential interaction between stent type and two multivariable event predictors: small stents (<3 mm) and bypass graft stenting, suggesting the largest benefit of drug-eluting stents (DES) in these two specific settings.

In light of these results, we suggest the authors to provide raw data (possibly in a table) for these two separate cohorts of patients (those receiving small stents and those treated in bypass grafts), and not only the Kaplan–Meier curves for the total cohort of patients treated (as shown in Figure 3 of the manuscript). Indeed, while there is already enough evidence related to the benefits, in terms of repeated revascularization procedures, of DES over bare metal stents in small vessels, 2,3 little data exist on the percutaneous treatment of bypass grafts with DES, 4 and only a minority of these data come from controlled prospective studies. 5

Despite the absolute number of patients treated for bypass lesions in the BASKET trial is small (overall 47 patients, as evident in Table 1), a clear quantification of events (according to stent type) in this group would be helpful to obtain a first estimate of the expected rate of events in clinical practice. These data would also be potentially useful to plan future trials dedicated to DES in bypass grafts (due to the paucity of data coming from controlled prospective studies).

Additionally, we believe it should be worthwhile to clarify whether the bypass conduits treated inside the trial were all venous grafts or also arterial conduits.

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Targeted stent use in clinical practice based on evidence from the Basel Stent Cost Effectiveness Trial (BASKET): reply

We thank Agostini Pierfranco and colleagues for their interest in our analysis of the 18-month BASKET subgroup analysis. We are well aware that the subgroup of patients with percutaneous treatment of bypass grafts with drug-eluting vs. bare-metal stents is particularly interesting; this was the reason why we performed a specific analysis of this subgroup comparing it with other patients with similarly sized native vessel stenting and submitted it as manuscript to another cardiology journal. Obviously, the number of patients so treated was small in BASKET because drug-eluting stents ≥4 mm were not available when this study was performed. All bypass grafts treated in BASKET were saphenous vein grafts. We hope that the BASKET bypass graft manuscript will be accepted for publication soon such that it may help for the planning of future more definite trials on this subgroup of patients as suggested by Agostini et al.

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