Previous studies have shown that exercise capacity measured in metabolic equivalents (METs) is a powerful predictor of cardiovascular events in patients with cardiovascular risk factors or established coronary artery disease.

In the COURAGE Trial, there was no incremental clinical benefit of an initial management strategy of percutaneous coronary intervention (PCI) when added to a background of lifestyle intervention and optimal medical therapy (OMT) over OMT alone in reducing long-term death or myocardial infarction among patients with stable ischemic heart disease (SIHD).

However, the relationship between the baseline exercise capacity achieved during standard exercise treadmill testing (ETT) and long-term cardiovascular outcomes in the COURAGE Trial has not been previously examined.

The aim of this study was to examine the impact of baseline exercise capacity on cardiovascular outcomes in SIHD patients who were randomized to an initial management strategy of PCI + OMT versus OMT alone in the COURAGE Trial.

Among the 2,287 COURAGE Trial patients, 1,052 patients (46%) underwent baseline ETT prior to randomization, of whom 527 patients subsequently were treated with PCI + OMT and 525 patients were treated with OMT alone.

Patients who qualified for COURAGE trial on the basis of ischemic ST-segment deviation on the resting ECG, as well as those undergoing pharmacologic vasodilator stress perfusion imaging or dobutamine stress echocardiography were excluded.

Patients in both arms were categorized into 2 subgroups based on the METs achieved during ETT, which was defined as either impaired exercise capacity (<7 METs) or intact exercise capacity (≥7 METs).

The primary outcome measure was a composite of all-cause death or nonfatal myocardial infarction (MI). Follow-up ranged from 2.5 to 7 years (median = 4.6 years).

The Cox proportional hazards model was used to estimate hazard ratios/95% confidence intervals for the composite primary endpoint. The cumulative event-free survival curves were estimated by Kaplan-Meier method and were compared using the log-rank test.

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There was no difference in the composite end point of death or MI in patients assigned to PCI+OMT vs. OMT alone, irrespective of whether patients had intact or impaired exercise capacity at baseline.

There was a non-significant trend toward a lower composite primary end point in patients with intact exercise capacity as compared with patients who had impaired exercise capacity in both OMT (HR: 0.64, 95% CI: 0.40-1.04, P=0.07) and PCI (HR: 0.67, 95% CI: 0.44-1.03, P=0.07) arms.

Stable ischemic heart disease patients with intact exercise capacity at baseline had a trend toward improved long-term clinical outcomes, regardless of initial treatment strategy (percutaneous coronary intervention plus optimal medical therapy versus optimal medical therapy) assignment.

While the higher risk subgroup of patients with impaired exercise capacity might be expected to derive proportionately greater clinical benefit from revascularization, we could not demonstrate that those patients assigned to the percutaneous coronary intervention plus optimal medical therapy had a lower long-term rate of all-cause death or nonfatal myocardial infarction as compared to patients receiving optimal medical therapy alone.

DISCLOSURES: None


REFERENCE