Abstract

BACKGROUND:

The appropriate use criteria for revascularization of stable ischemic heart disease have not been evaluated using randomized data. Using data from the randomized ISCHEMIA trial (International Study of Comparative Health Effectiveness with Medical and Invasive Approaches; July 2012 to January 2018, 37 countries), the health status benefits of an invasive strategy over a conservative one were examined within appropriate use criteria scenarios.

METHODS:

Among 1833 participants mapped to 36 appropriate use criteria scenarios, symptom status was assessed using the Seattle Angina Questionnaire-7 at 1 year for each scenario and for each of the 6 patient characteristics used to define the scenarios. Coronary anatomy and SYNTAX(Synergy between percutaneous coronary intervention with Taxus and cardiac surgery) scores were measured using coronary computed tomography angiography. Treatment effects are expressed as an odds ratio for a better health status outcome with an invasive versus conservative treatment strategy using Bayesian hierarchical proportional odds models. Differences in the primary clinical outcome were similarly examined.

RESULTS:

The mean age was 63 years, 81% were male, and 71% were White. Diabetes was present in 28% and multivessel disease in 51%. Most clinical scenarios favored invasive for better 1-year health status. The benefit of an invasive strategy on Seattle Angina Questionnaire angina frequency scores was reduced for asymptomatic patients (odds ratio [95% credible interval], 1.16 [0.66–1.71] versus 2.26 [1.75–2.80]), as well as for those on no antianginal medications. Diabetes, number of diseased vessels, proximal left anterior descending coronary artery location, and SYNTAX score did not effectively identify patients with better health status after invasive treatment, and minimal differences in clinical events were observed.

CONCLUSIONS:

Applying the randomization scheme from the ISCHEMIA trial to appropriate clinical scenarios revealed baseline symptoms and antianginal therapy to be the primary drivers of health status benefits from invasive management. Consideration should be given to reducing the patient characteristics collected to generate appropriateness ratings to improve the feasibility of future data collection.