STEMI Quality-Improvement Program in Kerala, India 'a Success'

Marlene Busko

December 05, 2017

ANAHEIM, CA — A quality-improvement program adapted for care of patients with acute MI in Kerala, India showed some promising results but did not meet its primary end point of significantly reduced major adverse cardiovascular events (MACE) at 30 days[1].

"We did demonstrate improvements in important process measures, including key medications and reperfusion for patients with ST-elevation myocardial infarction," Dr Mark D Huffman (Northwestern University Feinberg School of Medicine, Chicago, IL) told *theheart.org | Medscape Cardiology*. "And over the [2-year] study, we did observe this 1.1% reduction in 30-day MACE rates.

"While our primary outcome after adjustment did demonstrate an attenuation of that effect," he added, "this is a success story for Kerala." MACE was a composite of death, reinfarction, stroke, and major bleeding.

For these and other reasons, experts at the American Heart Association 2017 Scientific Sessions, where Huffman presented the results, deemed the ASC QUIK study to be positive.

The quality-improvement "tool kit" in the study was based on the AHA Get With The Guidelines–Coronary Artery Disease (GWTG-CAD) quality-improvement program, adapted to local conditions.

"What you have seen is that sticking to the Get With The Guidelines was pretty high, [including] use of dual antiplatelet therapy or statins," Dr Padhinhare P Mohanan (Westfort Hi-Tech Hospital, Thrissur, India), also with ACS QUIK, said in an interview. But there is room for improvement, he said, such as more use of beta-blockers, ACE inhibitors, and reperfusion therapy.

"I was very impressed at the very high rate of dual antiplatelet therapy [DAPT]—97% if not more," AHA president-elect Dr Ivor Benjamin (Medical College of Wisconsin, Milwaukee) told *theheart.org | Medscape Cardiology*.

Part of the lower prescribing rates for beta-blockers and ACE inhibitors "may actually just reflect the cost of these medications," he speculated.

"I applaud the investigators for doing a very ambitious study," discussant Dr Gregg C Fonarow (University of California, Los Angeles), said when interviewed. The study would be impressive in the US, and "to do that in India is even more impressive."

Although the study did not meet its primary end point, "I view this as a very positive study," he said, which "sets the stage for further quality-improvement interventions."

Importantly, whether patients with acute MI were in the intervention or the control hospitals, "you saw a pretty good adoption of many of the therapies, producing good outcomes."

"We learn from the US, and the US learns from India," senior author Dr Dorairaj Prabhakaran (Public Health Foundation of India, Haryana, India) told *theheart.org | Medscape Cardiology*. "That is the biggest takeaway, that and the partnership."

Initiative to Improve 30-Day MI Outcomes

India has the highest burden of heart attacks in the world due to its large population and high rate of heart disease, Huffman said, adding that the study's team had previously demonstrated opportunities for improvements in heart-attack care in Kerala.

In ACS QUIK, they aimed to determine whether a multifaceted, locally adapted quality-improvement "tool kit" for caring for patients with an acute MI would improve heart-attack care and outcomes.

The tool kit that was adapted to Kerala from the GWTG-CAD program included:

- An audit/feedback reporting mechanism, monthly meetings, and a "Plan-Do-Study-Act" strategy.

- Standardized admission and discharge order sets.

- Patient-education materials related to diet, exercise, and tobacco cessation.

- Free online quality-improvement training from the Institute for Healthcare Improvement.

- Ability for teams in the intervention hospitals to share ideas.

The researchers enrolled 21,374 patients with acute MI who were treated at 63 private and government hospitals in Kerala, from November 2014 to November 2016.

All hospitals started in the control group for the first 4 months. At 4-month intervals, 12 or 13 successive hospitals "crossed over" to the intervention (quality-improvement initiative).

The researchers used this stepped design to separate the intervention from background changes over time. As a result, 10,066 patients were treated at control hospitals and 11,308 patients at intervention hospitals.

Baseline characteristics in both groups were well-matched. The patients had a mean age of 61; three-quarters were men; and two-thirds had STEMI. Close to half (47%) had diabetes, and 30% smoked.

Among eligible patients without contraindications in both groups, 97% received aspirin and 97% received DAPT (aspirin plus clopidogrel, prasugrel [(*Effient, Efient*, Lilly/Daiichi-Sankyo], or ticagrelor [*Brilinta*, *Brilique*, *Possia*, AstraZeneca]) during hospitalization.

Compared with patients treated at control hospitals, those at intervention hospitals were more likely to receive an in-hospital beta-blocker (42% vs 38%), anticoagulant (83% vs 81%), and thrombolytic therapy (31% vs 25%) and to undergo echocardiography (92% vs 86%) ($P \leq 0.04$ for all differences).

For patients treated in the intervention hospitals, there was a modest increased rate of discharge on a beta-blocker (68% vs 64%), statin (96% vs 95%), or an ACE inhibitor/angiotensin-receptor blocker (ARB) (48% vs 42%). Both groups had high rates of being discharged on aspirin (97%) or DAPT (98%).

The rate of 30-day MACE was lower for patients treated in the intervention vs control hospitals (5.3% vs 6.4%), driven largely by a lower rate of 30-day death (3.9% vs 5.1%). These rates "compare favorably with US rates," said Huffman.

The unadjusted odds ratio (OR) for 30-day MACE was 0.82 (95% CI, 0.73–0.91); but after adjustment for hospital clustering and temporal trends, the OR was 0.98 and no longer significant (95% CI 0.80–1.21).

Fonarow said, "There are many more countries across the world where we need these types of efforts, and hopefully more collaboration and partnerships will ensue."

For more from theheart.org | Medscape Cardiology, follow us on Twitter and Facebook.

References

1. Huffman MD, Mohanan PP, Devarajan RD, et al. Effect of a quality improvement tool kit on acute myocardial infarction in India: The ACS QUIK cluster randomized stepped wedge trial. American Heart Association 2017 Scientific Sessions. November 14, 2017; Anaheim, CA. Session LB.06

Medscape Medical News © 2017

Cite this article: STEMI Quality-Improvement Program in Kerala, India 'a Success' - *Medscape* - Dec 05, 2017.

of cookies.
close