JACC: MINERVA results demonstrate full adherence to guideline-recommended therapies associated with lower rate of a second major cardiovascular event and cost savings

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Journal of the American College of Cardiology (JACC) Publishes Data Assessing the Impact of Medication Adherence on Long-term Cardiovascular Outcomes and Cost

The Journal of the American College of Cardiology (JACC) published the findings from the **MINERVA** study, which investigated associations between medication adherence and long-term major adverse cardiovascular events (MACE) in patients' post-myocardial infarction (MI) and those with atherosclerotic disease (ATH). The study, "Assessing the Impact of Medication Adherence on Long-term Cardiovascular Outcomes," showed a significant association between higher adherence rates and improved patient outcomes, and reductions in healthcare costs.

Recent statistics show that cardiovascular disease with established atherosclerotic (i.e., coronary, cerebrovascular and peripheral artery) disease is the number one cause of death in the U.S., affecting more 83 million Americans. However, nearly half of these patients do not adhere to their prescribed regimen two years following an initial cardiovascular event.

"One of the biggest challenges cardiologists face with patients who have already experienced a cardiovascular event is medication adherence," said Valentin Fuster, M.D.,Ph.D Director of the Zena and Michael A. Wiener Cardiovascular Institute at the Icahn School of Medicine at Mount Sinai, General Director of Spain's National Center for Cardiovascular Research (CNIC) and MINERVA Principal Investigator. "Often, patients diligently follow medication regimens immediately following a CV event, like a heart attack, only to falter as time progresses – either because prescriptions become too expensive or because they become discouraged by the pill burden associated with the post-CV event regimen. The data we obtained and analyzed from Aetna, the nation's fourth-largest health insurer is yet another proof point that the simple act of reliably taking medication could significantly reduce patients' secondary events – potentially improving patient outcomes and saving money."

Key Findings

- In the **post-MI cohort**, which included 4,015 adults who initiated both statins and ACEI medications, only 43 percent of patients were classified as fully adherent, 31 percent were classified as partially adherent and 26 percent patients were classified as non-adherent. Findings showed that acute post-MI patients must maintain a very high level of adherence (greater than 80 percent) in order to accrue the benefit – prevention of a secondary CV event. Fully adherent patients were at a significantly lower risk of MACE than partially adherent (a 19 percent risk reduction) and non-adherent populations (a 27 percent risk reduction). There was no statistical difference in risk observed between the non-adherent and partially adherent groups. Full adherence was associated with reduced per patient annual direct medical costs associated with hospitalizations for MI of $369 and $440 and for revascularizations of $539 and $844 over partial and non-adherence respectively.
- The **ATH cohort** which included 12,976 adults who initiated both statin and ace-inhibitor (ACEI) medications and also had two coronary, cerebrovascular or peripheral artery disease ICD codes (claims) within one category or a revascularization code, exhibited a more worrisome situation in terms of adherence pattern; only 34 percent were fully adherent. Fully adherent patients had significantly lower risk of MACE compared to the two other groups – a 44 percent risk reduction compared to non-adherent patients and 24 percent risk reduction compared to partially adherent patients. They also showed a statistically significant reduction in hospitalizations of the composite outcome compared to the non-adherent group ($p<0.0001$). Full adherence was associated with reduced per patient annual direct medical costs associated with hospitalization for MI of $116 and $215 and for revascularizations of $288 and $799 over partial and non-adherence respectively

These study results raise important questions about what actionable steps cardiologists and others who care for these patients should take to ensure patient adherence to prescribed regimens

First author Sameer Bansilal, MD, MS, Assistant Professor (Cardiology) at Icahn School of Medicine at Mount Sinai, said " The fact that less than half the patients are adherent with life-saving medications soon after their heart attack, and only one-third continue to take their medications religiously, defines the magnitude of this problem. We have spent the last two decades generating evidence for the efficacy and safety for these drugs- now it's time to make sure we deliver them adequately!"

“These study results raise important questions about what actionable steps cardiologists and others who care for these patients should take to ensure patient adherence to prescribed regimens,” Fuster said. “Counseling and close patient monitoring improve adherence, but these interventions can be complicated and expensive, and are only part of the solution. Predictive models indicate that interventions that reduce patients’ pill burden, specifically the CV polypill for secondary prevention, used in concert with other efforts shows promise for improving adherence, and ultimately patient outcomes.”

The CV polypill for secondary prevention is a medication that combines three common medications prescribed post-CV event into one treatment. A U.S. study evaluated the efficiency of different interventions (mailed education, disease management and the CV polypill for secondary prevention) that showed that the CV polypill for secondary prevention combined with mailed education could be cost-effective and potentially cost-saving. Furthermore, a recent study demonstrated that the improved treatment adherence achievable using a fixed-dose combination CV polypill for secondary prevention to prevent recurring MI can avoid up to 15 percent more fatal and non-fatal CV hospitalizations than the components administered separately, conferring potential savings to healthcare systems.

“MINERVA data point to the crucial role long-term medication adherence plays in reducing the risk of a secondary CV event in post-MI and ATH patients,” said Dr. Olga Fidalgo, Corporate Director of Licensing and Business Development of Ferrer Internacional, the Barcelona-based international pharmaceutical company that sponsored the MINERVA study. “Dr. Fuster, his co-authors and many others in the CV care community, suggest that patients could benefit from a CV polypill for secondary prevention to help improve adherence, reduce the risk of additional MACE events and save money.”

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