Depressed older adults who are adherent to medications have a lower risk of hospitalisation for coronary artery disease

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ABSTRACT FROM: Cooper DC, Trivedi RB, Nelson KM, *et al*. Antidepressant adherence and risk of coronary artery disease hospitalizations in older and younger adults with depression. *J Am Geriatr Soc* 2014;62:1238–45.

WHAT IS ALREADY KNOWN ON THIS TOPIC

Depression is a public health threat, particularly due to its bidirectional, adverse associations with common chronic conditions including coronary artery disease (CAD). The American Heart Association recognises depression among the major risk factors for morbidity and mortality following an acute coronary event.[1] Depression in older adults is associated with greater risk of potentially preventable medical hospitalisations—such as those for angina—and early rehospitalisation after myocardial infarction.[2] Yet, little is known about whether depression treatment could mitigate cardiovascular risk or associated service use.

METHODS

The study was conducted in the Veterans' Affairs health system, the largest integrated healthcare system in the USA. The sample consisted of 40 844 adults under 65 years and 9417 adults ≥65 years old with an ambulatory visit in 2009–2010, who had a depression diagnosis, were prescribed an antidepressant and had received treatment within the preceding 4 months. The study excluded people with bipolar disorder, schizophrenia, spinal cord injury inpatients or those who died during the study period. Primary exposures were age (<65 or ≥65) and antidepressant adherence (medication possession ratio, a commonly used measure based on pharmacy dispensing representing the amount of time between refills when patients possess the prescribed medication, during a 6-month period). Outcomes were inpatient admissions for CAD (eg, angina, ischaemic or, arteriosclerotic heart disease, but not acute myocardial infarction) assessed from electronic medical records over a variable follow-up interval (13–48 months).

WHAT THIS PAPER ADDS

- This study is novel in linking an objective indicator of depression treatment quality, antidepressant adherence, to inpatient medical service utilisation.
- A 26% lower rate of CAD-related hospitalisation among depressed older adults with good antidepressant adherence (≥80% medication possession) independent of other well-established CAD risk factors is sizeable (HR 0.74, 95% CI 0.60 to 0.93).
- Complex associations between depression, depression treatment and response, medical outcomes and health service use are modified by other risk factors (eg, age).

LIMITATIONS

- The observational design limits the ability to infer causality between adherence and hospitalisations. Although the authors controlled for potential confounders, patients with poorer antidepressant adherence may have differed from those with better adherence in other ways that were associated with their outcome. For example, antidepressant adherence may be associated with overall medication adherence, including cardiovascular medications, which would lower risk for CAD hospitalisations. Conversely, antidepressant non-adherence is greater among individuals with limited health literacy,[3] who may be at elevated risk for hospitalisations for reasons unrelated to depression treatment.
- Adherence based on pharmacy dispensing data overestimates actual adherence since it is unknown whether medications are consumed.
- Medication possession ratio cannot be calculated for patients who never fill or refill the medication. Thus, findings may not generalise to patients who are least adherent, a subgroup at particularly high risk of poor depression outcomes that may likewise be at greatest risk for poor CAD outcomes and greater service utilisation.
- The study did not assess depressive symptom severity or antidepressant effectiveness.

WHAT NEXT IN RESEARCH

Further long-term observational research should clarify why important associations exist in some subgroups but not others and under what circumstances depression treatment affects medical outcomes, service utilisation and costs. To accomplish this, future research should:

- Examine other key mediators and effect modifiers, such as gender, socioeconomic status, social support, among others.
- Disentangle the effects of depression history and severity on medical sequelae and service use by including measures of personal history of prior episodes and current self-rated severity.
- Conduct clinical trials with heterogeneous patient samples, including civilians, to determine the population for whom effective treatment improves cardiovascular and other chronic disease outcomes.
- Evaluate the long-term cost-effectiveness of improving depression treatment for different populations.

DO THESE RESULTS CHANGE YOUR PRACTICE AND WHY?

The study informs future research but because it does not establish a causal relationship between adherence and hospitalisations, it does not change our practice. Existing recommendations include screening for depression among older adults with medical comorbidities, offering evidence-based treatments and monitoring treatment adherence,[4] for example by asking patients at every visit to explain how they take their medications. Clinicians may consider educating depressed patients with lower antidepressant adherence by explaining that their risk of hospitalisation is 1/3 higher than patients who adhere to their antidepressant medications and discussing strategies to improve adherence.

Competing interests None.

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REFERENCES

1. **Lichtman JH**, Froelicher ES, Blumenthal JA, *et al*. Depression as a risk factor for poor prognosis among patients with acute coronary syndrome: systematic review and recommendations. *Circulation* 2014;**129**:1350–69.
2. **Davydow DS**, Zivin K, Katon WJ, *et al*. Neuropsychiatric disorders and potentially preventable hospitalizations in a prospective cohort study of older Americans. *J Gen Intern Med* 2014;**29**:1362–71.
3. **Bauer AM**, Schillinger D, Parker MM, *et al*. Health literacy and antidepressant medication adherence among adults with diabetes: the Diabetes Study of Northern California (DISTANCE). *J Gen Intern Med* 2013;**28**:1181–7.
4. **Lichtman JH**, Bigger JT Jr, Blumenthal JA, *et al*. Depression and coronary heart disease: recommendations for screening, referral, and treatment. *Circulation* 2008;**118**:1768–75.

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