Impact of Medication Adherence on Clinical and Economic Outcomes in Cardiovascular Disease: A Scoping Review of Real-World Evidence

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Background

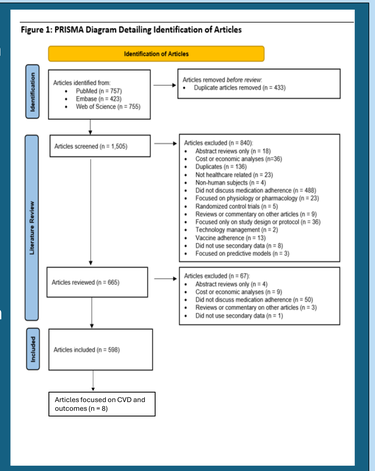
- Adherence to medications, especially those for chronic conditions such as cardiovascular disease (CVD), is important for reducing the risk of poor outcomes.
- While many studies have published research related to adherence to medications in this disease state, a scoping review of the association of adherence with reduced risk and costs was needed.
- This research attempts to establish both the extent of research related to primary measurement for adherence and the potential associations with outcome reduction.

Objective

- To evaluate the impact of adherence on outcomes related to cardiovascular disease using real-world data through a scoping review.

Methods

- A scoping review of published research evaluating medication adherence or persistence was conducted.
- We examined full text articles identified from PubMed, EMBASE, and Web of Science using the terms compliance, adherence, administrative claims, real-world, and observational.
- Among 1,505 articles initially retrieved, 598 met the inclusion criteria.
- We identified 8 studies that examined the association of adherence with outcomes related to CVD.



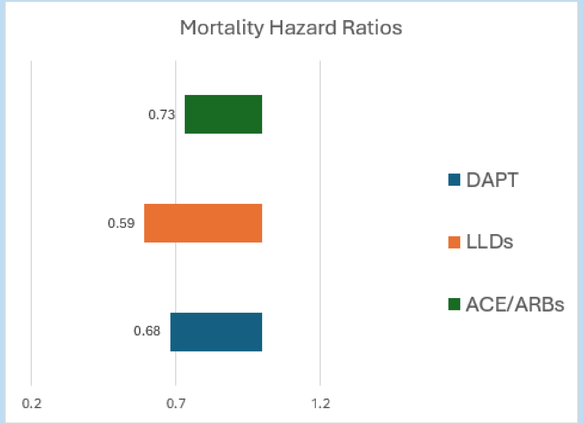
Results

Table 1: Cardiovascular-Related Studies Identified

Author/Year	Country	Population	Measure	Medications	Outcome(s)	Finding(s)
May et al., 2022	US	N=7,339	PDC	Statins	MACE	PDC >80% ↓MACE risk (HR: 0.51, p < 0.05)
Hickson et al., 2019	US	N=101,011	PDC	Statins	All-cause mortality	↑ ADH post-AMI ↓ all-cause mortality risk
Huber et al., 2019	Switzerland	N=4349	MPR	Various	MACE	MPR >80% associated with ↓ mortality likelihood
Vyas et al., 2017	US	N=11,629	PDC	Antiplatelet therapy	HCRU, cardiac events, transfusions	Non-ADH associated with poor outcomes
Lin et al., 2016	US	N=541,221	PDC	Statins	ASCVD-related hospitalizations	ADH varied by diagnoses and severity of risk
Gagne et al., 2014	US	N=90,111	PDC	Statins	Composite outcome (ACS hospitalizations, stroke, all-cause mortality)	↑ ADH for generics with ↓ primary outcomes
Slejko et al., 2014	US	N=11,126	PDC	Statins	5-year CV event risk	ADH yr 2 w/PDC<0.20 had 2.26-fold ↑ hazard
Kleiner et al., 2009	US	N=3,923	MPR	Beta-blockers	Mortality, reinfarction	Survival rates 6 months post-AMI ↑ with ↑ ADH

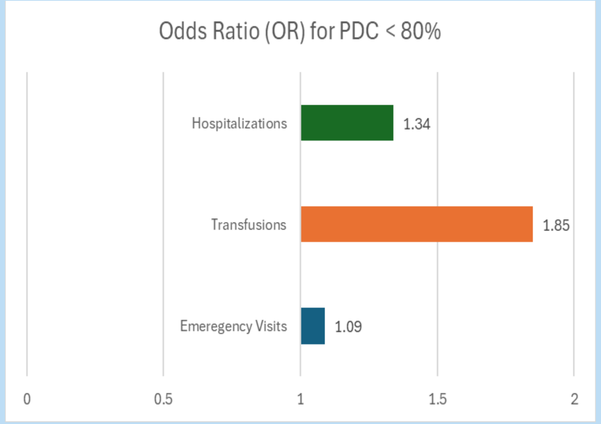
PDC, proportion of days covered; MPR, medication possession ratio; ACS, acute coronary syndrome; CV, cardiovascular; MACE, major adverse cardiovascular events; ASCVD, atherosclerotic cardiovascular disease; HCRU, healthcare resource utilization; AMI, acute myocardial infarction; HR, hazard ratio; CI, confidence interval; ADH, Adherence

Figure 2: Impact of Adherence on CVD Mortality[3]



DAPT, dual antiplatelet therapy: LLD, lipid-lowering drugs; ACE,/ARB, angiotensin-converting enzyme inhibitors/angiotensin receptor blockers

Figure 3: Impact of Adherence on HCRU[4]



Limitations

- Scoping reviews prioritize broad literature mapping over formal risk-of-bias appraisal.
- These findings identify research trends and gaps but cannot be used to establish definitive clinical recommendations.
- Definitions of adherence and persistence varied across studies (e.g., MPR vs PDC).

Conclusion

- Only 8 CVD-specific studies were identified, highlighting the limited amount of real-world research available in this area.
- Having high levels of adherence was associated with reduced risk of adverse cardiovascular outcomes including MACE, hospitalizations, and mortality.
- These studies highlight the critical role that high adherence plays in reducing negative cardiovascular disease outcomes.

Acknowledgements

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