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

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Background

- Adherence to medications is critical for achieving optimal therapeutic benefits.
- Although adherence is recognized as being important, the impact of adherence on outcomes from real-world medical care, including clinical endpoints (e.g., disease progression), healthcare resource utilization (HCRU) and cost, has not been well-characterized.
- This scoping review summarizes the current landscape of real-world studies evaluating the association between adherence and clinical and economic outcomes across a variety of therapeutic and disease areas and medications.

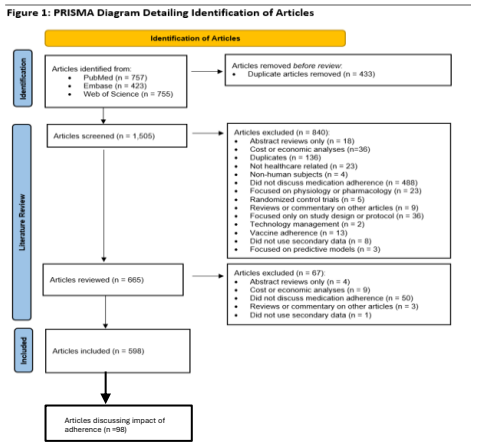
Purpose

- To evaluate the benefit of adherence to medicinal products on clinical and other outcomes using real-world data within a scoping review of the literature.

Methods

- A scoping review of studies on medication adherence or persistence using real-world secondary data (e.g., administrative claims or electronic medical records).
- Articles were identified from PubMed, EMBASE, and Web of Science using the terms compliance, adherence, administrative claims, real-world, observational.
- Of 1,505 articles retrieved, 98 analyzed the impact of adherence for over 30 unique clinical conditions (Figure 1).
- Included articles were reviewed and information extracted on disease area(s), type of adherence measure (e.g., proportion of days covered [PDC], medication possession ratio [MPR], and outcome(s) for which the impact of adherence was assessed.

Results



- The most common diseases for which the impact of adherence was examined included osteoporosis/fractures (n=14), type 2 diabetes mellitus (n=12), cardiovascular disease (n=8), and multiple sclerosis (n=8).
- Across diverse patient populations, settings, and methodological approaches (e.g., adherence measure used), adherence was consistently associated with positive outcomes, including reductions in disease progression/sequalae; lower HCRU (e.g., inpatient, outpatient, emergency department visits); improved survival; and reduced costs.
- Table 1 presents selected findings from a sample of disease that illustrate the impact of adherence.

Table 1. Selected Studies Examining the Impact of Adherence by Disease

Disease	Selected Findings
Asthma	MPR ≥80% for combination inhaled corticosteroid/long-acting beta-agonist therapy was associated with 50% reduction in the odds of asthma exacerbations; 54% reduction in oral steroid use; and significantly lower emergency department visits.[1]
Breast Cancer	10% increase in mortality risk (hazard ratio (HR)) was found in patients with MPR<80% to tamoxifen[2]. Non-adherence to lapatinib was associated with increased outpatient visits in women with metastatic disease (Rate Ratio = 1.26, 95% CI: 1.03-1.54).[3]
Cardiovascular Disease	Patients with PDC >80% (vs PDC <20%) to statins had a significant decrease in MACE risk (HR=0.51, 95% CI=0.37-0.71).[4] MPR > 80% was associated with lower mortality for multiple drug classes: statins (HR = 0.59 [95% CI, 0.45-0.77]), ACE/ARBs (HR = 0.73 [0.56-0.95]), and dual antiplatelet therapy (HR = 0.68 [0.50-0.91]).[5]
Multiple Sclerosis	Adherent patients (MPR ≥80%) to disease-modifying therapies experienced a 29% lower risk of relapse and a 37% lower risk of MS-related hospitalizations.[6]
Osteoporosis	32% increased risk for hip/pelvis/femur and 34% increased risk for vertebral fracture was observed in women with MPR <50% (any osteoporosis drug) vs. MPR ≥80%.[7]
Type 2 Diabetes Mellitus	Every 10% improvement in adherence for oral diabetes medications (based upon PDC) was associated with a 0.1% decrease in HbA1c. [8]

Limitations

- Observational studies are subject to bias and confounding.
- Adherence/persistence varied across studies (e.g., MPR, PDC)
- Outcomes of interest and definitions of outcomes varied across studies.

Conclusion

- Adherence to medications is consistently linked to improved clinical outcomes and lower healthcare and societal costs. The results are consistent across different therapeutics areas, drug classes, patient populations.
- Findings support the need for continued efforts to enhance adherence across a wide spectrum of health conditions.
- Lack of standardized method for assessing adherence in real-world studies.
- The results also provide valuable real-world evidence to guide payers, providers, and policymakers.

Acknowledgements

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