



ESTIMATING MEDICATION ADHERENCE IN HEART FAILURE USING ELECTRONIC HEALTH RECORDS: A SYSTEMATIC REVIEW

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BACKGROUND AND IMPORTANCE



Medication adherence is crucial for effective heart failure (HF) management; however, variations in methodologies may affect adherence estimates.



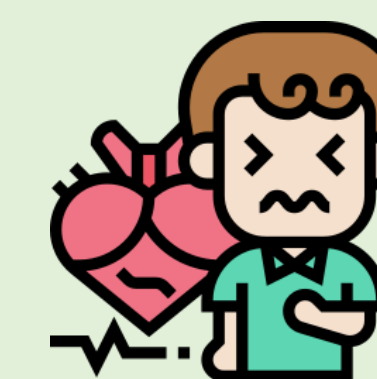
AIM AND OBJECTIVES

This review aimed to assess the consistency and reliability of the methods used to measure medication adherence in HF patients.

MATERIALS AND METHODS



- ❖ A systematic review was conducted in March 2024, following PRISMA guidelines.
- ❖ Databases searched: PubMed, Embase, CINAHL, Web of Science, and Scopus
- ❖ Search terms: medication adherence, compliance, HF, and electronic health records.
- ❖ Observational studies assessing medication adherence using EHR among HF patients were included.



- ❖ **Variables collected:** study design, population characteristics, study dates, duration, and adherence assessment methods.
- ❖ Quality of adherence reporting was evaluated using The **TEN-SPIDERS** criteria.

RESULTS

Selected studies

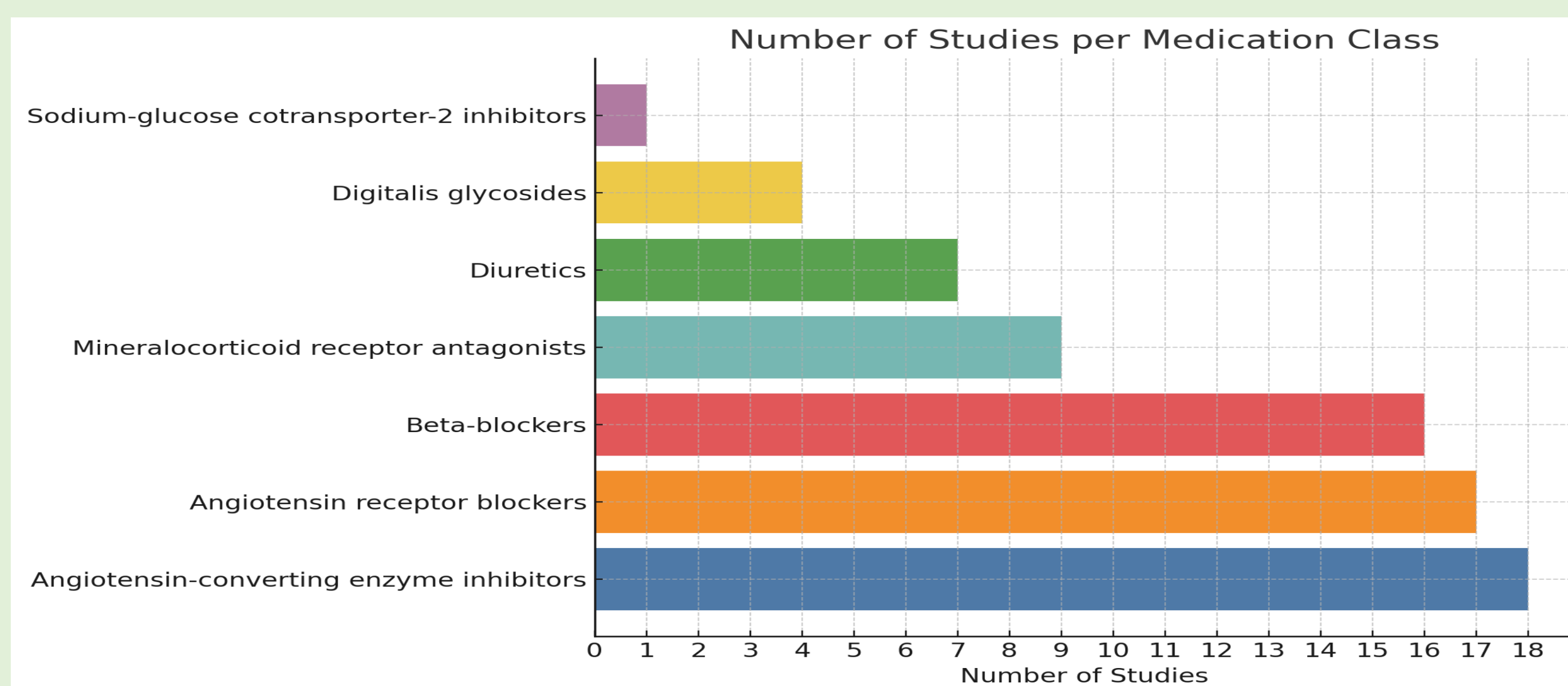
- ✓ Total studies identified: 1,934
- ✓ Included: 20 (published between 1999 and 2023)
- ✓ Type: Retrospective observational studies
- ✓ **Focus:**
 - Four on HF with reduced ejection fraction
 - All assessed secondary adherence (none assessed primary adherence)

Observation Period: 1 year in 15 studies and 6 months in 5 studies

Methods of Adherence Assessment

Primary	Others
<ul style="list-style-type: none"> • Proportion of Days Covered: 11 studies • Medication Possession Ratio: 2 studies 	<ul style="list-style-type: none"> • Proportion of patients covered • Continuous multiple interval measures • Fill-frequency • At least two prescriptions in a year • Patient adherence indicator • Continued treatment during follow-up

Medications examined



Adherence Analysis

1. Adherence was analysed for **single medications** in 14 studies, **multiple medications** in two studies, and **both** in three studies.
2. Ten studies **dichotomised adherence** at $\geq 80\%$, while 10 analysed it as a **continuous variable**.

Methodological Considerations

- ❖ **Allowed switching within therapeutic classes:** 4 studies
- ❖ **Allowed Stockpiling:** 8 studies
- ❖ **Censored Hospital stays:** 7 studies
- ❖ **Censored death:** 10 studies

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CONCLUSION AND RELEVANCE

The review highlighted significant variability in measurement techniques, observation periods, and handling of clinical factors, complicating adherence rate comparisons. A standardized approach, like TEN-SPIDERS, is recommended for future studies to ensure consistent and transparent adherence reporting.