Evaluating treatment burden associated with contemporary quadruple heart failure therapy in older adults – a systematic review

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Background

- Heart failure is a predominant cause of hospital admissions, mainly affecting adults over the age of 65.
- Extensive research has shown that four-pillar medical therapy increasingly improves clinical outcomes for this age group.
- Despite this, adherence is relatively poor, particularly in frail adults, to this guideline-directed medical therapy.
- It is vital to explore the reasons for non-adherence so that we can treat patients more holistically and continue to improve clinical outcomes in this population.

Predominantly affects adults >65 years

Aim

To evaluate other imperative outcomes of quadruple therapy for heart failure.

This includes geriatric outcomes such as:

- **Falls**
- **Orthostatic symptoms**
- **Adherence**
- **Deprescribing**
- **Cognition**
- **Functional decline**

Method

A systematic search of Embase, MEDLINE, CENTRAL and **Scopus** identified cohort, case-controlled studies and randomized controlled trials that evaluated treatment burden associated with current guideline recommended heart failure therapy in adults aged 65 and over.

Case reports, literature reviews and editorials were excluded.

Databases searched
- Embase
- MEDLINE
- CENTRAL
- Scopus

Study types included
- Cohort studies
- Case-controlled studies
- Randomized controlled trials

Excluded
- Case reports
- Literature reviews
- Editorials

The Four Pillars of Guideline-Directed Medical Therapy for Heart Failure

- **ARNI/ACEi/ARB** (RAS inhibition)
- **Beta-blocker** (neurohormonal modulation)
- **MRA** (mineralocorticoid receptor antagonist)
- **SGLT2 inhibitor** (metabolic & renal benefits)

Results

Evidence was derived from major randomized controlled trials and observational cohort studies conducted in routine clinical practice.

Cardiovascular outcomes

Current guideline directed medical therapy was associated with preserved cardiovascular outcomes across older individuals with varying degrees of frailty; yet implementation was suboptimal.

Uptake of quadruple therapy

Only 15%–18% of older adults received quadruple therapy for heart failure following hospital admission.

~1/3 discontinued treatment within 12 months.

Polypharmacy

A key contributor to treatment burden affecting up to **84%** of patients.

of whom experienced polypharmacy.

Conclusion

Guideline-directed medical therapy preserves cardiovascular health outcomes in patients with varying frailty with heart failure. However, its real-world impact is limited by poor implementation, low uptake of quadruple therapy treatment discontinuation, and the substantial burden of polypharmacy, highlighting the need for strategies to improve adherence and optimize prescribing in this population.