

A SYSTEMATIC LITERATURE REVIEW AND POOLED RATES ANALYSIS OF HEART FAILURE TRIALS IN THE US

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OBJECTIVE

- To quantify the risk of outcomes experienced by patients receiving standard of care home monitoring in trials for non-pharmaceutical heart failure interventions.

METHODS

- A systematic literature review (PROSPERO registration CRD42023410084) on heart failure in the US was conducted utilizing the EMBASE and PubMed databases to identify literature published between 2008 and 2023.
- The inclusion criteria were that the randomized controlled trial had to be completed in the US with patients who were over the age of 18 and who had been diagnosed with heart failure in the last 12 months.
- Studies needed to include a standard of care home monitoring arm
- Outcomes extracted were hospital readmissions, emergency room (ER) visits, survival, and length of hospital stay.
- A meta-analysis of proportion was performed using R software (Meta and Metafor packages)¹ following best practice guidance.²

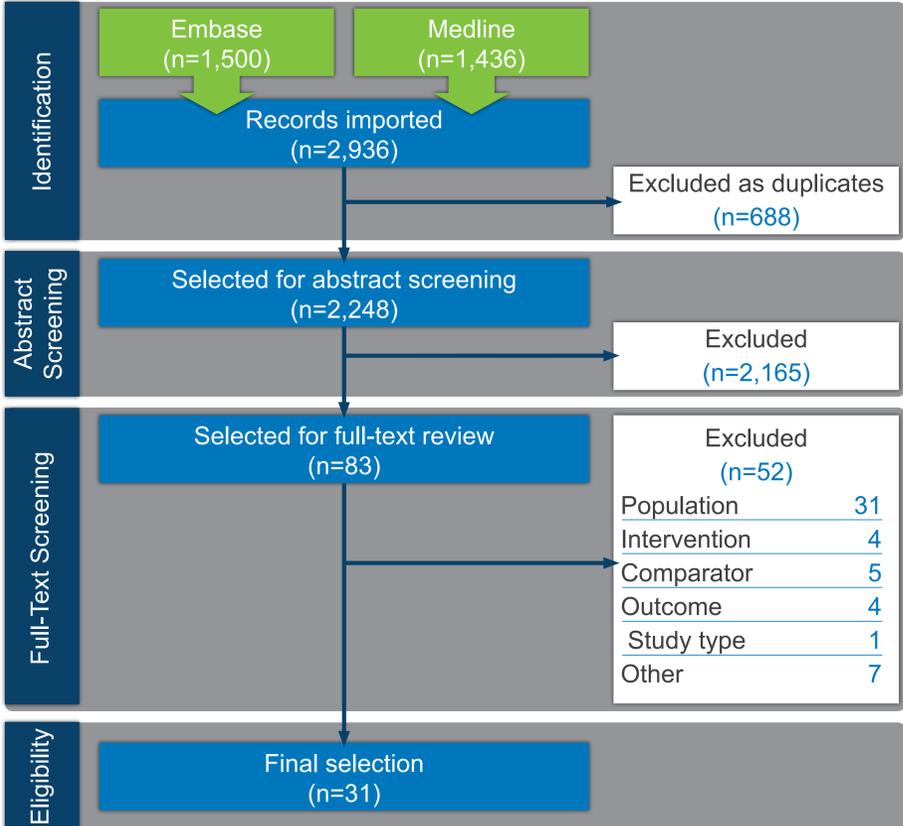


Figure 1 PRISMA diagram of the systematic literature review

RESULTS

- Across the two databases 2,936 abstracts were identified; once duplicates were removed, 2,248 remained for screening.
- After full-text review, 31 were included for analysis.
- The pooled estimate of all-cause and heart failure-specific **hospital readmission** at 3 months were:
 - 32.55% (95% CI: 24.03%; 41.63%, **Figure 2A**)
 - 33.19% (95% CI: 24.16%; 42.83%, **Figure 2B**)

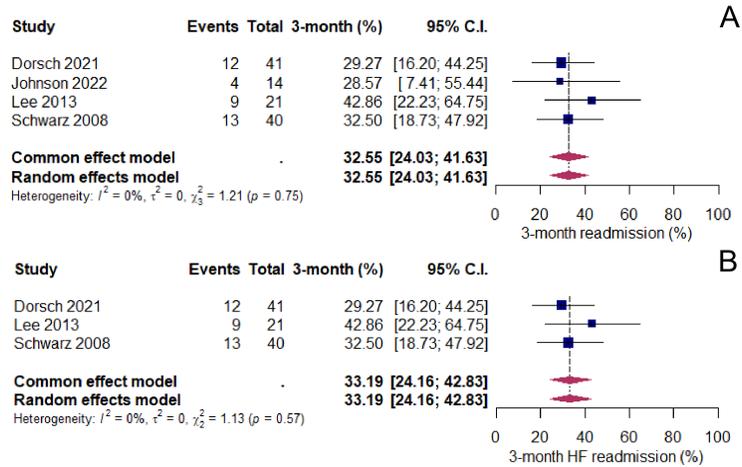


Figure 2 All-cause (A) and heart-failure-specific (B) readmissions for 3 months

- The pooled estimate of all-cause and heart failure-specific **ER visits** at 3 months were:
 - 21.91% (95% CI: 7.56%; 40.65%, **Figure 3A**)
 - 27.19% (95% CI: 7.06%; 53.52%, **Figure 3B**)

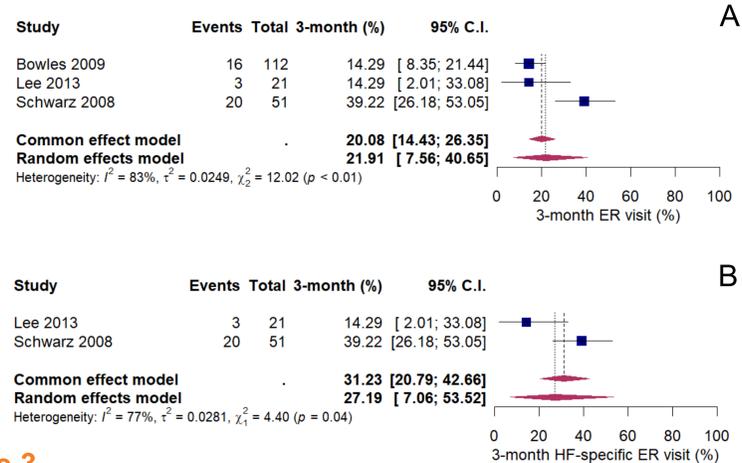


Figure 3 All-cause (A) and heart-failure-specific (B) ER visits for 3 months

CONCLUSION

- Events that can increase the cost of care are relatively common in patients recently diagnosed with heart failure.
- Hospitalization and ER visit rates are similar between all-cause and heart failure-specific populations at 3-months.
- Interventions that could optimize care and prevent such events would likely be beneficial to both patients and payers.

- The 3-month all-cause **mortality** pooled rate was 3.46% (95% CI: 2.12%; 5.06%, **Figure 4A**).
- Heart failure-specific **mortality** data were only sufficient for 6-months, the rate was 5.92% (95% CI: 2.82%; 9.92%, **Figure 4B**).

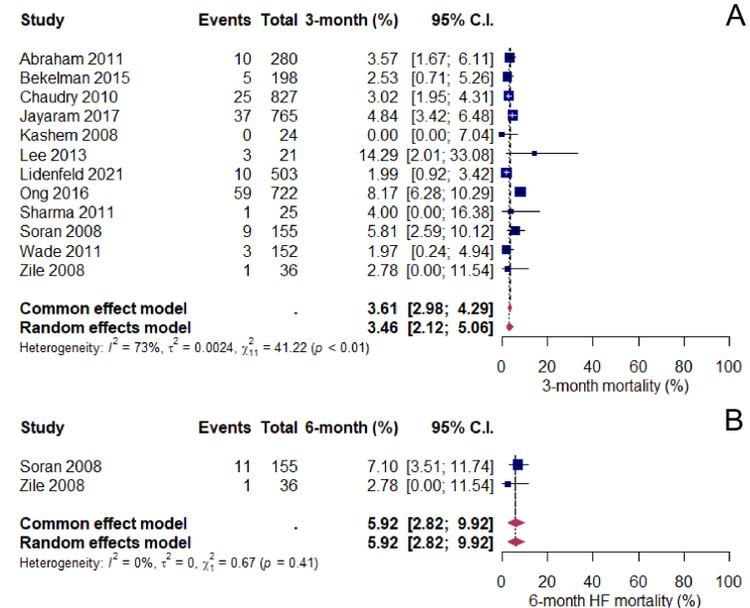


Figure 4 All-cause mortality for 3 months (A) and heart-failure-specific mortality for 6 months (B)

References

- R Core Team (2023). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>
- Wang, N. (2023). Conducting Meta-analyses of Proportions in R. Journal of Behavioral Data Science, 3(2), 64-126

Disclosure

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