

Review: Hospital-at-home care does not increase mortality or readmission rates in acute exacerbations of COPD

Ram FS, Wedzicha JA, Wright J, Greenstone M. Hospital at home for acute exacerbations of chronic obstructive pulmonary disease. *Cochrane Database Syst Rev.* 2003;(4): CD003573.

QUESTION

In patients with acute exacerbations of chronic obstructive pulmonary disease (COPD), is hospital-at-home care as effective as hospital inpatient care?

DATA SOURCES

Studies were identified by searching (up to August 2003) the Cochrane Central Register of Controlled Trials, MEDLINE (from 1966), EMBASE/Excerpta Medica (from 1980), ClinicalTrials.gov, Science Citation Index, and online respiratory journals; scanning the bibliographies of relevant studies; and contacting authors and known trialists in the field.

STUDY SELECTION AND ASSESSMENT

Studies were selected if they were randomized controlled trials in patients presenting to the emergency department (ED) with an acute exacerbation of COPD who would not require obligatory admission and compared hospital admission with home support by a respiratory nurse specialist who made multiple scheduled or extra home visits after ED or early (< 72 h) hospital discharge. Study quality was assessed regarding allocation concealment.

COMMENTARY

COPD is a common illness that is costly to treat, especially when hospitalization is required for acute exacerbations. Total estimated costs in 1993 in the United States were \$24 billion; 60% of these costs were directly related to hospital-based care (1, 2). Given the good bioavailability of oral agents used to treat this condition (antibiotics and corticosteroids) and the effectiveness of other, easy-to-administer therapies (inhaled agents and supplemental oxygen) (2), out-of-hospital treatment of acutely ill patients with COPD should be feasible. The meta-analysis by Ram and colleagues showed that this is, in fact, the case. However, this conclusion comes with several caveats.

First, only 1 in 4 screened patients were ultimately deemed suitable for hospital-at-home care. Second, selection criteria on which patients to consider for enrollment varied among studies, probably reflecting the lack of a widely accepted definition of an acute exacerbation of COPD (3). Third, many patients ultimately allocated to at-home care were initially hospitalized, some for up to 72 hours, thus mitigating the potential effect of this review on practice patterns. Fourth, the feasibility of a strategy of at-home care for carefully triaged patients was possible because of the availability of a robust home care system staffed by respiratory nurse specialists in close communication with physicians, usually pulmonologists. This limits the generalizability of the findings. Fifth, although no differences existed in long-term outcome measures between

OUTCOMES

Readmission rate and mortality at 2 to 3 months after presentation. Secondary outcomes included lung function and patient or caregiver satisfaction and preference.

MAIN RESULTS

7 trials (754 patients) done in the United Kingdom, Spain, and Australia met the selection criteria. Mortality and hospital admission were not increased in patients who received hospital-at-home care (Table). Of 2 trials that reported preference for type of care, patients and caregivers preferred hospital-at-home care (Table), but another trial showed no difference between groups for satisfaction with care. In 3 trials that measured lung

function, change in FEV₁ did not differ between hospital-at-home and hospital inpatient groups.

CONCLUSION

In patients with acute exacerbations of chronic obstructive pulmonary disease not requiring obligatory admission, hospital-at-home care is as effective as hospital inpatient care for preventing hospital readmission and mortality at 2 to 3 months of follow-up.

Source of funding: The Netherlands Asthma Foundation.

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Hospital at home vs hospital inpatient care in chronic obstructive pulmonary disease*

Outcomes	Number of trials	Weighted event rates		RRR (95% CI)	NNT (CI)
		Hospital at home	Hospital inpatient care		
Hospital readmission	7	28%	31%	11% (-12 to 28)	Not significant
Mortality	6	5.7%	8.7%	39% (-5 to 64)	Not significant
RBI (CI)					
Preference for hospital at home care	2	87%	57%	53% (23 to 90)	4 (3 to 6)

*Abbreviations defined in Glossary; RRR, RBI, NNT, and CI calculated from data in article using a fixed-effects model. Follow-up for mortality ranged from 8 weeks to 3 months.

the 2 study groups, important short-term outcomes (e.g., return to normal well-being and baseline functionality) were not reported. Finally, insufficient data existed for a meaningful comparative economic analysis between inpatient and at-home hospital care. Lacking such an analysis, it is unlikely that out-of-hospital care for this group of patients will be widely adopted.

Ram and colleagues have shown the feasibility of hospital-at-home care for certain patients with acute exacerbations of COPD. Pending more definitive and generalizable data, it is premature for practitioners to fully embrace this strategy.

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