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Title

Frailty in people with COPD: A systematic review of prevalence, trajectories, and adverse outcomes

Priority 1 (Research Category)

Geriatrics

Presenters

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Abstract

Context: Frailty is common in people with COPD, however definitions of frailty are highly variable. Understanding prevalence, trajectories and outcomes associated with frailty is important to inform interventions and clinical management. Objective: This systematic review synthesizes the measurement and prevalence of frailty in COPD, within-person trajectories of frailty over time, and associations between frailty and adverse health outcomes in people with COPD. Study design: Systematic review. Dataset: Medline, Embase and Web of Science searched (1 January 2001-8 September 2021). Searches supplemented by forward citation searching and hand-searching reference lists. Population studied: Inclusion criteria were observational studies of adults (>18 years) with COPD, from any setting. Instrument: Studies using any frailty measure were included. Outcomes: Frailty prevalence, trajectories, or association with health-related outcomes. Results synthesized using narrative synthesis and, where heterogeneity allowed, random-effects meta-analyses. Results: 53 eligible studies using 11 different frailty measures identified. Most common were frailty phenotype (n=32), frailty index (n=5) and Kihon checklist (n=4). Sample size ranged 22-8074. Mean age ranged 50-88 years. Prevalence estimates varied between frailty definitions, setting, and age from 2.6% to 80.9%. Frailty in people with COPD changes over time and improved following pulmonary rehabilitation. Baseline airflow limitation, dyspnoea and frequency exacerbations were associated with worsening frailty status. Frailty was associated with greater risk of mortality (5/7 studies), COPD exacerbation (7/11), and hospital admission (3/4). Using frailty phenotype (frail vs robust), the pooled hazard ratio for mortality was 1.80 (95% CI 1.24-2.63) and pooled incident rate ratios were 1.42 (0.94-2.17) for COPD exacerbation and 1.46 (1.10-1.92) for hospitalisation. Frailty was associated with greater airflow obstruction (11/14), dyspnoea (15/16), COPD severity scores (10/12), poorer quality of life (3/4) and greater disability (1/1). Conclusion: Frailty is a common among people with COPD and associated with an increased risk of adverse outcomes. Frailty may indicate poor prognosis, but can be responsive to intervention. Proactive identification of frailty may aid risk stratification and identification of individuals for whom interventions, such as pulmonary rehabilitation, may be targeted.