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Economic consequences of dyspnea misinterpretation in COPD patients with coexisting cardiovascular disease: a scoping review

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Abstract

Background: Coexisting COPD and cardiovascular (CV) disease make it more difficult to identify the underlying cause of dyspnea.
We aimed to assess the economic consequences of misinterpreting dyspnea of pulmonary or cardiac origin in patients with COPD and CV disease.
Methods: We searched PubMed and Google Scholar for articles published between 2015 and 2025. We screened titles and abstracts and assessed full texts for inclusion based on predefined criteria.
Results: After deduplication and evaluating relevance, we included 37 articles. Misinterpretation of dyspnea significantly increases healthcare (HC) costs through higher hospitalization rates (HR), additional testing, and delayed treatment, while also contributing to intangible costs, including reduced quality of life, decreased tolerance to physical activity and social interaction, and impaired emotional health.
Concomitant heart failure (HF) in COPD patients may mask exacerbations (ECOPDs), resulting in delayed treatment optimization, higher risk of moderate-to-severe ECOPDs, and increased HC costs. Patients with more severe dyspnea (mMRC ≥2) incurred over twice the total COPD treatment costs. B-type natriuretic peptide (BNP) testing offers a rapid and cost-effective method for identifying the cause of dyspnea, thereby reducing HR, intensive care unit (ICU) visits, and total hospital days.
Delayed initiation or escalation of guideline-directed medical therapy (GDMT) in COPD patients with HF substantially increases HC costs due to poorer clinical outcomes, higher HR, and more frequent ICU visits. Lack of optimal GDMT further increases the risk of HA and overall management costs.
Conclusions: Timely BNP testing, GDMT, and optimized COPD therapy are cornerstones of dyspnea management in COPD patients with coexisting CV disease.

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