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The complex interplay between chronic obstructive pulmonary disease and cardiovascular risk

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Patients with chronic obstructive pulmonary disease (COPD) are at increased risk of cardiovascular (CV) disease and CV events, which contribute substantially to overall mortality. Although COPD and CV disease share several risk factors, their association extends beyond common exposure to smoking, older age, and physical inactivity. Systemic inflammation, hypoxemia, oxidative stress, endothelial dysfunction, and hyperinflation further contribute to the interplay between pulmonary and CV disease. Ischemic heart disease, heart failure, arrhythmias, and cerebrovascular disease therefore represent an important component of the overall disease burden in patients with COPD.[1-4]

Cardiovascular risk increases particularly during and after an acute exacerbation of COPD. A meta-analysis of the EXACOS-CV studies, including 1,030,875 patients, showed that during the first seven days following an exacerbation, the risk of a major CV event or death was more than tenfold higher (HR 10.22; 95% CI 5.34–19.57). The risk subsequently declined but remained elevated for up to one year after the exacerbation, with the duration of increased risk depending on exacerbation severity. An acute COPD exacerbation should therefore be regarded not only as a respiratory event but also as a period of markedly increased CV vulnerability.

The GOLD Science Committee 2026 highlights that CV events also occur in patients with COPD without previously diagnosed CV disease and that conventional CV risk prediction models may underestimate the true risk in this population. Consequently, increasing emphasis is being placed on the assessment of overall cardiopulmonary risk. In line with this approach, the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR) and the Spanish Society of Cardiology (SEC) published a joint document in 2026 proposing the development of cardiopulmonary clinical units for patients with COPD and CV disease, with the aim of improving coordination between pulmonary and cardiovascular care.

Cardiovascular disease in COPD should therefore not be regarded merely as a comorbidity. An acute exacerbation represents an important opportunity to reassess CV risk and optimize the management of modifiable risk factors. Timely identification of patients at highest risk, prevention of COPD exacerbations, and closer collaboration between pulmonologists and cardiologists are important steps toward reducing overall cardiopulmonary morbidity and mortality.

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