

Letter to the Editor

Environmental factors like air pollution: not to be forgotten in the 2021 ESC guidelines on heart failure**Factores ambientales como la contaminación del aire: no debe olvidarse en la guía sobre insuficiencia cardiaca de la ESC 2021****To the Editor,**

The natural history of heart failure (HF) is characterized by acute decompensation episodes, which are the leading cause of hospitalization among patients older than 65 years.¹ The main reasons why patients with acute HF seek urgent medical care are increasing signs and symptoms of congestion.¹ Although some patients are admitted with a clear correctable trigger, in many patients, there is no clear precipitating factor. The 2021 European Society of Cardiology (ESC) Guidelines on HF have recently been published.² Compared with the 2016 Guidelines, the new document is extremely innovative.¹ However, we would like to point out an important aspect related to the effect of air pollution on acute decompensated HF, a lifestyle recommendation which should be considered in these new guidelines on HF² and in the editorial recently published in *Revista Española de Cardiología*.³

Air pollutants have been estimated to be one of the 10 leading risk factors for global mortality.⁴ Air pollution is a heterogeneous mixture of particulate matter (PM) and gases derived from multiple sources, including fossil fuel combustion.⁴ PM itself is an amalgam of pollutants (eg, carbon species, sulfates, nitrates, metals) ranging in size from a few nanometers to several microns. While a variety of gases (eg, ozone) have been linked to adverse health effects, the largest body of evidence supports PM \leq 2.5 μm in diameter (PM_{2.5}) as a major environmental threat to global public health.⁴

In a systematic review and meta-analysis of 35 studies, a short-term increase in gaseous components and PM_{2.5} was associated with increased risk of hospitalization due to HF and death.⁵ Specifically, an increase of 10 $\mu\text{g}/\text{m}^3$ in PM_{2.5} increased the relative risk of HF hospitalization or mortality by 2.1% (relative risk, 1.021; 95% confidence interval, 1.014 to 1.028). In a recent study from China with data from 26 cities with high PM_{2.5} concentrations, an interquartile increase in PM_{2.5} corresponded to a 1.2% increase in HF hospitalizations.⁶

We would have thought that the available information on air pollution and HF deserves renewed attention and focus to eliminate this risk factor. Its omission from the 2021 ESC Guidelines on HF could deprive the medical community of potentially useful information. Policies and regulations reducing air pollution should be supported, and patients should be advised about its risks.

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AUTHORS' CONTRIBUTIONS

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CONFLICTS OF INTEREST

None.

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