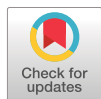SHAREABLE PDF

The environmental impact of inhaled therapy: making informed treatment choices

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Abstract

When selecting the best inhaler and drug combination for a patient with respiratory disease, a number of factors should be considered. While efficacy and safety of medical treatments are always a priority, in recent years the environmental impacts of all aspects of life have become an increasingly necessary consideration and inhaled therapies are no exception. The carbon footprint of an item, individual or organisation is one of the most important and quantifiable environmental impacts, assessed by the amount of greenhouse gases (often expressed in terms of carbon dioxide equivalents) generated throughout the life cycle. The two most commonly prescribed and manufactured inhaler types worldwide are pressurised metered-dose inhalers (pMDIs) containing hydrofluorocarbon (HFC) propellants and dry powder inhalers (DPIs). Most of the carbon footprint of current pMDIs is a result of the propellants that they contain (HFC-134a and HFC-227ea, which are potent greenhouse gases). In comparison, the powder in DPIs is dispersed by the patient's own inhalation, meaning DPIs do not contain a propellant and have a lower carbon footprint than most pMDIs currently available. Soft mist inhalers are another propellant-free option: the device contains a spring, which provides the energy to disperse the aqueous medication. In this review, we examine the published data on carbon footprint data for inhalers, providing an analysis of potential implications for treatment decision making and industry initiatives.