

COPD and Asthma Hospitalisations in Ireland During COVID-19

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The first case of coronavirus recorded in the Republic of Ireland was on 29th February 2020, with the first death from COVID-19 occurring on 11th March 2020 [Statement from National Public Health Emergency Team (1)]. The number of daily deaths from COVID-19 in the Republic of Ireland peaked at 77 on the 20th of April 2020 (1).

Despite the COVID-19 outbreak, the number of hospital discharges with a principal diagnosis of asthma in April 2020 was down 49% and for COPD was also down 49%, compared with the same time period in 2019 (Source: Hospital In-Patient Enquiry 2020, 87.4% coded).

Between 2nd of March and the 22nd May 2020, COPD and asthma patients with COVID-19 represented 3% of patients with COVID-19 discharged from Irish hospitals. The reported prevalence of asthma in Ireland is 7-9.4% (2). However, from 2nd March to 29th April, of the 83 asthma patients admitted to hospital with COVID-19, 51% received treatment in Intensive Care Unit (ICU), while 27% of admitted COVID-19 patients with a chronic respiratory disease other than asthma received ICU care. It would therefore appear that asthma and COPD patients were less likely to get COVID-19, but for those who did the consequences were more severe.

This pattern has been noted elsewhere, with several explanations proposed, including the impact of public health measures and isolating resulting in a reduction in exposure to other infectious agents; that asthma and COPD may have an inherently protective mechanism against coronavirus; or that therapies such as inhaled corticosteroids may help defend against viral acquisition (3). Of course, patients may also simply be avoiding health-care professionals and institutions for fear of coronavirus transmission and be enduring symptoms in isolation.

Another possible reason is the improvement in air quality seen during this period due to reduction in traffic and reduced industrial output. Improvements in air quality have been shown to reduce respiratory disease and respiratory related mortality. Figures obtained from the Environmental Protection Agency in Ireland note a 52% and 36% reduction in PM_{2.5} from monitoring stations in Dublin and Cork respectively for April when compared to April 2019. Similar reductions were seen in NO₂ in Dublin (urban 41%, suburban 56%) and Cork (suburban 21%) (4).

There are several reasons why asthma and COPD patients may not be presenting to hospitals. Although unlikely to be the sole reason, we believe that improved air quality may be a contributing factor.

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