

Mortality Related to Chronic Obstructive Pulmonary Disease during the COVID-19 Pandemic: An Analysis of Multiple Causes of Death through Different Epidemic Waves in Veneto, Italy

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Abstract

Mortality related to chronic obstructive pulmonary disease (COPD) during the COVID-19 pandemic is possibly underestimated by sparse available data. The study aimed to assess the impact of the pandemic on COPD-related mortality by means of time series analyses of causes of death data. We analyzed the death certificates of residents in Veneto (Italy) aged ≥ 40 years from 2008 to 2020. The age-standardized rates were computed for COPD as the underlying cause of death (UCOD) and as any mention in death certificates (multiple cause of death-MCOD). The annual percent change (APC) in the rates was estimated for the pre-pandemic period. Excess COPD-related mortality in 2020 was estimated by means of Seasonal Autoregressive Integrated Moving Average models. Overall, COPD was mentioned in 7.2% (43,780) of all deaths. From 2008 to 2019, the APC for COPD-related mortality was -4.9% (95% CI -5.5%, -4.2%) in men and -3.1% in women (95% CI -3.8%, -2.5%). In 2020 compared to the 2018-2019 average, the number of deaths from COPD (UCOD) declined by 8%, while COPD-related deaths (MCOD) increased by 14% (95% CI 10-18%), with peaks corresponding to the COVID-19 epidemic waves. Time series analyses confirmed that in 2020, COPD-related mortality increased by 16%. Patients with COPD experienced significant excess mortality during the first year of the pandemic. The decline in COPD mortality as the UCOD is explained by COVID-19 acting as a competing cause, highlighting how an MCOD approach is needed.

Keywords: COVID-19; chronic obstructive pulmonary disease; mortality; multiple causes of death.

FULL TEXT

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