

Diabetes as a cause of death across different COVID-19 epidemic waves

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Abstract

Aims

The aim of this study is to assess the role of diabetes as a cause of death through different epidemic waves of COVID-19.

Methods

The annual percentage change in age-standardized rates (APC) was estimated for diabetes as the underlying (UCOD) and as multiple causes of death (MCOD) in 2008-2019. Diabetes-related deaths in 2020 were compared to the 2018-2019 average. SARIMA models were applied to monthly excess in mortality considering seasonality and long-term trends.

Results

2018-2019-Age-standardized mortality rates decreased, especially among females (MCOD: APC -2.49, 95%CI -3.01/-1.97%). In 2020, deaths increased by 19% (95%CI 13-25%) for UCOD, and by 27% (95%CI 24-30%) for MCOD. Diabetes and COVID-19 accounted for 74% of such excess. During the first epidemic wave, the increase in observed rates vs predicted by the model was larger in males (March +39%, April +46%) than in females (+30% and +32%). In the second wave, a huge excess of similar magnitude was observed in the two sexes; rates in December exceeded those predicted by more than 100%.

Conclusions

The COVID-19 pandemic abruptly interrupted a long-term declining trend in mortality associated to diabetes. MCOD analyses are warranted to fully estimate the impact of epidemic waves on diabetes-related mortality.

Keywords: Covid-19, seasonality, trends; Diabetes; Mortality; Time series.

FULL TEXT

<https://pubmed.ncbi.nlm.nih.gov/35803315/>