SARS-CoV-2 and COVID-19 in diabetes mellitus. Population-based study on ascertained infections, hospital admissions and mortality in an Italian region with ~5 million inhabitants and ~250,000 diabetic people

Nutr Metab Cardiovasc Dis. 2021 Aug 26;31(9):2612-2618

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Abstract

Background and aims
Diabetes conveys an increased risk of infectious diseases and related mortality. We investigated risk of ascertained SARS-CoV-2 infection in diabetes subjects from the Veneto Region, Northeastern Italy, as well as the risk of being admitted to hospital or intensive care unit (ICU), or mortality for COVID-19.

Methods and results
Diabetic subjects were identified by linkage of multiple health archives. The rest of the population served as reference. Information on ascertained infection by SARS-CoV-2, admission to hospital, admission to ICU and mortality in the period from February 21 to July 31, 2020 were retrieved from the regional registry of COVID-19. Subjects with ascertained diabetes were 269,830 (55.2% men; median age 72 years). Reference subjects were 4,681,239 (men 48.6%, median age 46 years). Ratios of age- and gender-standardized rates (RR) [95% CI] for ascertained infection, admission to hospital, admission to ICU and disease-related death in diabetic subjects were 1.31 [1.19-1.45], 2.11 [1.83-2.44], 2.45 [1.96-3.07], 1.87 [1.68-2.09], all $p < 0.001$. The highest RR of ascertained infection was observed in diabetic men aged 20-39 years: 1.90 [1.04-3.21]. The highest RR of ICU admission and death were observed in diabetic men aged 40-59 years: 3.47 [2.00-5.70] and 5.54 [2.23-12.1], respectively.

Conclusions
These data, observed in a large population of ~5 million people of whom ~250,000 with diabetes, show that diabetes not only conveys a poorer outcome in COVID-19 but also confers an increased risk of ascertained infection from SARS-CoV-2. Men of young or mature age have the highest relative risks.

Keywords: COVID-19; Diabetes; Hospital admission; Mortality; SARS-CoV-2 infection.

FULL TEXT
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