



RISK FACTORS OF SARS-CoV-2 INFECTION

Eugeniu CALENICI

Institute of Cardiology, Republic of Moldova

Corresponding author: Eugeniu Calenici, e-mail: eugene.calenici@gmail.com

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Introduction. In late 2019 – early 2020, the world was met pandemic caused by the virus, causing Severe Acute Respiratory Syndrome (SARS-CoV-2), an infection also called COVID-19. This is a new coronavirus that was primarily reported to the World Health Organization (WHO) as a group of pneumological symptoms with viral etiology in Wuhan, China, on 31 December 2019. The cause of this disease is coronavirus (COVID-19), which leads to changes and inflammation in the upper and lower respiratory tract. On 30 January 2020, the WHO declared the outbreak of COVID-19 a global public health emergency. Since then, the virus has continued to spread very fast around the world and was described by the WHO as a pandemic on 11 March 2020.

Review is based on a biggest observational population study of all the risk factors of COVID-19 infection. The study was carried out in Royal College of General Practitioners, Oxford, and covering over 4 million of people. Were studied and analyzed risk factors as: age, sex and ethnicity, socioeconomic level, living space dimensions, rural-urban population, body mass index, smoker status, pregnancy, hypertension, chronic kidney disease, ischemic heart disease, chronic respiratory diseases including asthma, and chronic obstructive pulmonary disease, and type 1 and 2 diabetes. Patient variable with malignancy and immunocompromised status was separated due to the small number of patients in each group.

Material and methods. A cross-sectional study of patients in the Network of the Research and Surveillance Centre in Oxford, who were tested for SARS-CoV-2 between 28 January and 4 April 2020, was performed. Pseudonymized results were taken from electronic primary health care records. These data enabled estimating the living space sizes, the isolation level and rural-urban classification. Starting with the end of January 2020, surveillance centers submitted for all patients with symptoms of influenza or respiratory infection – nasopharyngeal smears for SARS-CoV-2 testing.

The following independent demographic aspects were studied as factors: age, sex and ethnicity, using an ontology to help case identification; socioeconomic level (using the English quintile index for multiple deprivation; living space dimensions based on the patient's pseudonymized address; and rural-urban division.

Results. The obtained results showed, for the first time, that only a small part of the substantially higher risks of death from COVID-19 among white groups and among people living in more disadvantaged areas can be attributed to existing disease. Improved strategies for the protection of people of these COVID-19 groups should be analyzed. The causes of a higher risk among non-white groups and disadvantaged areas require further exploration; it is recommended to collect data on occupational exposure and living conditions as first steps. The statistical power of the approach means that associations with less common risk factors can be assessed strongly in more details as soon as possible.

Conclusions. By September 2020 more than 28.000 articles were published related to COVID-19 in less than 9 months. 211 new papers every day. Mostly all of them had small population of the studies. In the investigated sample, it was found that increasing age, male sex, economic deprivation, urban location and black ethnicity were associated with higher chances of testing positive for SARS-CoV-2. Active smoking decreased the chance of a positive test. The review covers the most important subjects influencing the development of severe infection outcomes.