

Correlation Between Diabetes and COVID-19 Indices: A Global Level Ecological Study

Mirahmadizadeh Alireza, Ghelichi-Ghojogh Mousa, Jokari Kimia, Amiri Sanaz, Moftakhar Leila Moradian Mohammad Javad, Habibi Mohammad, Dehghani Seyed Sina, Hassani Amir Hossein, Jafari Alireza, Rezaei Fatemeh

Abstract

Introduction: Coronavirus is threatening the global public health as a new and widespread crisis. The researchers must keep in mind that one of the most vulnerable groups to COVID-19 are the people with underlying diseases, especially diabetes.

Objective: This ecological study aimed to investigate the correlation between diabetes and the epidemiological indices of COVID-19.

Methods: This ecological study included 144 countries. Their available data consists of the cumulative incidence rate of cases, cumulative incidence rate of death, recovery rate, case fatality rate, and performed tests of COVID-19, and diabetes. To collect the variables, a data set was provided which included the information of 144 countries based on diabetes and COVID-19 indices. Spearman coefficients were used for assess correlation between diabetes and COVID-19 indices. Also, Scatter plots of diabetes for the studied countries were drawn based on cumulative incidence rate of cases, cumulative incidence rate of death, tests, recovery rate, and case fatality rate of COVID-19.

Results: The results of this ecological study showed in total countries, there was a weak positive correlation between diabetes and cumulative incidence rate of cases and also cumulative incidence rate of death. Correlation between diabetes with test of COVID-19 was very weak. Scatter plots showed a weak liner correlation between diabetes and cumulative incidence rate of cases, cumulative incidence rate of death and test of COVID-19.

Conclusions: In this study, there was a weak positive correlation between diabetes and cumulative incidence rate of cases, cumulative incidence rate of death, and performed test of COVID-19. This disease is an enormous challenge for health policymakers; therefore, it is necessary to develop strategies and practical guidelines specific to each region to take the necessary care, especially for diabetic patients.

Keywords: COVID-19, diabetes, ecologic study