COVID-19 Mortality in Diabetic Patients: Meta-analysis

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Abstract:

Context:

Coronavirus disease 2019 (COVID-19) has been one of the deadliest pandemics in recent decade. The virus has specifically targeted the comorbid population in terms of mortality. The present systematic review and meta-analysis aimed to determine the overall mortality and diabetes-associated mortality in COVID-19 patients.

Methods:

To obtain the related data, six databases, including Pubmed, Embase, MEDLINE, Web of Science, Google Scholar, and DOAJ, were searched. The full-texts of articles presenting the data of COVID-19 mortality and diabetes-associated mortality were screened and retrieved. Statistical analysis was performed using the Stata (version 13). The odds ratio (OR) of mortality in diabetic patients was calculated with 95% confidence interval (CI). Random-effects model was used to synthesize data for the relevant outcomes. Heterogeneity was evaluated using I2 statistic. Forest plots visually showed the effect estimates of the included studies. We used funnel plots to evaluate potential publication bias. A two tailed $P < 0.05$ was considered as statistically significant.

Results:

A total of 35 studies with 25,934 patients were finally included for meta-analysis. The pooled prevalence of diabetes mellitus in patients with COVID-19 was 16.8% (n = 4381). The overall mortality seen in all the studies was 12.81% (n = 3159), and diabetes-associated mortality was 22.14% (n = 970). The pooled analysis of included studies showed that diabetes mellitus had a significantly higher mortality rate (22.14% vs. 12.81%, $P < 0.05$) with higher odds of death (pooled OR 1.83, 95% CI: 1.61 – 2.05). The funnel plot was symmetric, thereby indicating a low risk of publication bias.

Conclusions:

In conclusion, the presence of diabetes was associated with a significantly increased risk of mortality in patients admitted to the hospital with COVID-19. Thus, this subpopulation must be continuously monitored for glycemic levels, coagulation abnormalities, and inflammatory surge.

Keywords:

COVID-19, Diabetes, Mortality.