



A beneficial effect of Metformin in improving survival among obese and diabetic patients affected with COVID-19: Findings of a Meta-analysis

Name: Mashail Abdullah Alshehri
Country: Kingdom of Saudi Arabia
Email ID: Mashail.alshehri@hotmail.com

ABSTRACT

Background Diabetes Mellitus is one of the major non-communicable diseases among patients suffering from COVID-19, which increases the likelihood of hospital admission and leads to life-threatening complications such as mortality. While Metformin has been found effective in reducing the mortality associated with COVID-19, there is a need to update the existing meta-analyses and quantitatively synthesize the findings regarding the effect of Metformin in reducing mortality.

Methods We undertook a meta-analysis of 21 studies after searching for epidemiological studies systematically in PubMed/Medline, EMBASE, and Science Direct. We used odds ratios and their respective 95% confidence interval (CI) for a binary outcome, which was mortality, to examine the effect of Metformin on mortality. Heterogeneity was assessed using the I² statistic and Q-test statistics. We evaluated the publication bias using a funnel plot, which was further confirmed by eager test statistics. A p-value of < 0.05 was considered statistically significant.

Results Overall, the findings revealed that Metformin reduced mortality by about 35%, and the results were statistically significant (OR= 0.66; 95% CI 0.62 to 0.69; p<0.05). This revealed that patients who took Metformin had improved survival by more than one-third than those who were not given Metformin. We found a relatively higher heterogeneity with an I² value of 85.60% (Chi-squared = 138.85. The inverted funnel plot for the findings for the effect of Metformin on mortality was asymmetrical with test statistics for an eager test of -3.64 and a P-value of 0.002.

Conclusion The present updated meta-analysis revealed a positive effect of Metformin in reducing mortality among diabetic patients suffering from COVID-19. However, before implementing Metformin at a larger scale, clinicians and endocrinologists need to assess the risks versus benefits associated with Metformin for diabetic patients of COVID-19. Also, future studies are warranted to investigate the effects of Metformin for non-diabetic patients.

Presenter Name: Mashail Abdullah Alshehri
Mode of Presentation: Poster
Contact number: +966535450453