included. All included studies were considered moderate to high quality. No decreased mortality of COVID-19 diabetic patients was found among DPP-4 users (OR 0.86, 95%CI: 0.22,3.41, P=0.083, I^2=81%). In the subgroup analysis, studies in Asia (OR 3.11, 95%CI: 0.78, 12.34, P=0.001, I^2=70%) did not found reduced mortality, whereas studies in Europe (OR 0.36, 95%CI: 0.23, 0.56, P<0.00001, I^2=0%) were associated with reduced mortality. Based on study designs, the four case-control studies (OR 1.27, 95%CI: 0.27, 5.93, P=0.76, I^2=89%) did not find reduced mortality, but one cohort study (OR 0.13, 95%CI: 0.02, 0.84, P=0.03) showed a reduced mortality. The four studies investigating Type 2 Diabetes Mellitus (T2DM) did found reduced mortality (OR 0.74, 95%CI: 0.13, 4.24, P=0.73, I^2=90%). For sample size >200, reduced risk of mortality (OR 0.28, 95%CI: 0.07, 1.15, P=0.08, I^2=32%) was found, however, for sample ≤200, no statistically significant association (OR 1.44, 95%CI: 0.23, 8.89, P=0.70, I^2=93%) was found. Sensitivity analysis by changing models and omitting each study at a time confirm the stability of the result. Begg's test (z=-0.24, P=1.000) and Egger's test (t=0.56, P=0.618) did not detect a significant risk of publication bias. **Conclusion:** The current meta-analysis did not find reduced mortality for COVID-19 diabetic patients who take DPP-4. However, subgroup-analyses found reduced mortality in Europe. More high-quality original studies are needed to further explore the association between DPP-4 use and the mortality risk of COVID-19.

Diabetes Mellitus and Glucose Metabolism

COVID-19 AND DIABETES

Is Metformin Use Associated With a Decreased Mortality for COVID-19 Diabetic Patients? A Meta-Analysis

Chenyu Sun, MD, MSc[1], Ce Cheng, DO[2], Keun Young Kim, MD[1], Mubashir Ayaz Ahmed, MD[1], Reveena Manem, MD[1].

[1]AMITA Health Saint Joseph Hospital Chicago, Chicago, IL, USA, [2]University of Arizona College of Medicine at South Campus, Tucson, AZ, USA.

Introduction: Coronavirus disease 2019 (COVID-19) has been spreading globally for more than half a year. Previous studies remain controversial regarding whether metformin is associated with reduced risk for COVID-19 diabetic patients. Thus, this meta-analysis is performed. **Method:** A comprehensive literature search on PubMed and Web of Science was conducted to identify all relevant studies published prior to October 2020 according to the established inclusion criteria. This meta-analysis was reported in conformity to the Preferred Reporting Project declared by the Systematic Review and Meta-Analysis (PRISMA). The quality assessment was performed by the Newcastle-Ottawa Scale (NOS). The pooled odds ratio (OR) and 95% confidence intervals (CI) were calculated to estimate the association between metformin use and mortality for COVID-19 patients. A random-effect or fixed-effect model was used based on heterogeneity significance. Subgroup analysis was performed based on in-hospital-use or home-use, and different sample sizes. Sensitivity analysis and publication bias detection were also performed.

All statistical analyses were performed using RevMan software (version 5.3; Cochrane library) and STATA 12.0 statistical software (Stata Corp., College Station, TX), and all P values were two-tailed, the test level was 0.05. **Result:** 97 articles were obtained from the database search, and 5 articles obtained from other sources. 8 articles involving 11,169 participants were included. Most studies were considered moderate quality. A statistically significant association between metformin use and decreased mortality of COVID-19 patients was found (OR 0.53, 95%CI: 0.34, 0.83, P=0.005, I^2=77%). In the subgroup analyses, home-use of metformin was also associated with a reduced risk of mortality (OR 0.54, 95%CI: 0.35, 0.84, P=0.006, I^2=66%), and one study reporting in-hospital use did not find reduced mortality among COVID-19 patients taking metformin (OR 1.65, 95%CI: 0.71, 3.86, P=0.247). For sample size >1,000, no statistically significant reduced risk of mortality (OR 0.84, 95%CI: 0.57, 1.26, P=0.41, I^2=73%) was found, however, for sample ≤1,000, a statistically significant reduced risk of mortality (OR 0.29, 95%CI: 0.19, 0.44 P<0.00001, I^2=0%) was found. Sensitivity analysis by change fixed-effect models to random-effect models and by omitting each study at a time confirmed the relative stability of the result. Begg's test (z=0.37, P=0.711) and Egger's test (t=-1.98, P=0.096) did not detect a significant risk of publication bias. **Conclusion:** The current meta-analysis demonstrates that metformin use is associated with decreased mortality for COVID-19 diabetic patients. However, only one study investigating the in-hospital use of metformin. More high-quality original studies are needed to further explore the association between metformin use and mortality risk of COVID-19.

Diabetes Mellitus and Glucose Metabolism

COVID-19 AND DIABETES

Outpatient Diabetic Outcome During the Covid-19 Pandemic: A Retrospective Single Center Analysis

Robert Krahmer, BS[1], Charat Thongprayoon, MD[2], Darin Ruanpeng, MD[3].

[1]University of Minnesota Medical School Duluth, Duluth, MN, USA, [2]Division of Nephrology and Hypertension, Mayo Clinic, Rochester, MN, USA, [3]St.Luke's Endocrinology Associates, Duluth, MN, USA.

Background: Previous studies have shown that telemedicine is an effective alternative method for health care delivery. The COVID-19 pandemic has acutely stimulated expansion of telemedicine across the country. This study aimed to determine characteristics of telehealth visit and short term HbA1c outcome in patients with diabetes mellitus in endocrinology clinic during the COVID-19 pandemic. **Methods:** A single center retrospective chart review was conducted in all patients seen in endocrinology clinic for diabetes mellitus between 5/27/2020–7/20/2020. Data were extracted from electronic medical record. The primary research question is percentage of patients who achieved HbA1C ≤ 8% at 3 month follow up. Secondary research questions are characteristic of patients and clinic visits, diabetic technology usage, 3 month follow up mean HbA1c and HbA1c change. This project was approved by