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http://www.ijcpa.in

International Journal of CHEMICAL AND PHARMACEUTICAL ANALYSIS

October-December 2022

eISSN: 2348-0726 ; pISSN : 2395-2466

DOI:10.21276/2395-2466.22.10.086

| Commentary | Volume-10 | Issue-3 | Article ID:086 |
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# EFFECTS OF METFORMIN ON CARDIOVASCULAR MORTALITY

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**Received:** 01-Sep-2022, Manuscript No. IJCPA-22-77537; **Editor assigned:** 05-Sep-2022, PreQc No. IJCPA-22-77537 (PQ); **Reviewed:** 20-Sep-2022, QC No.IJCPA-22-77537; **Revised:** 27-Sep-2022, Manuscript No. IJCPA-22-77537(R); **Published:** 04-Oct-2022;DOI:10.21276/2395-2466.22.10.086

## DESCRIPTION

Most probably diabetic patients are at high risk of cardiovascular diseases, mainly of coronary heart disease by about 3-fold. According to a study, people with type 2 diabetes who have never had a myocardial infarction share the same risk of developing Coronary Artery Disease (CAD) as people who have never had diabetes. The National Cholesterol Education Program now views diabetes as having a comparable risk of developing coronary heart disease as a result of this. Although there is no question that diabetic people have a higher risk of developing CAD events, it is still unclear if the cardiovascular risk diabetes confers is genuinely similar to that of a previous myocardial infarction.

More protection against the development of macrovascular problems was provided by metformin than would be anticipated from its effects on glycemic control alone. The risk of all-cause mortality, diabetes-related mortality (p=0.017), and any endpoint associated with diabetes were all statistically significantly decreased, but not myocardial infarction (p=0.052).

Retrospective research of patient databases in Saskatchewan, Canada revealed 40% and 36%, respectively, significant decreases in total and cardiovascular mortality. The PRESTO trial revealed significant decreases in all-cause mortality (61%), myocardial infarction (69%), and any clinical event (28%). According to the HOME experiment, there is a lower chance of getting macrovascular disease. An 8 week term on metformin improved maximal ST-segment depression, Duke score, and incidence of chest discomfort in non-diabetic participants with normal coronary angiography and two consecutively positive exercise tolerance tests when compared to placebo. The

results of a recent meta-analysis that revealed that the cardiovascular effects of metformin might be less severe than previously thought should be viewed cautiously due to the small number of randomized controlled trials that were included.

As the population ages, diabetics' chance of developing Congestive Heart Failure (CHF) roughly doubles. The progression of asymptomatic left ventricular dysfunction to symptomatic heart failure, an increase in HF hospitalizations, and an overall higher mortality risk in patients with chronic HF are all closely linked to Diabetes Mellitus (DM) and hyperglycemia. Despite all of its advantages, metformin should not be used in people with heart failure since it increases the chance of developing lactic acidosis, an uncommon but serious metabolic disorder brought on by severe tissue hypoperfusion. Despite a significant warning to take metformin cautiously in this population, the US Food and Drug Administration removed the heart failure contraindication from the medication's package.

A decreased risk of death from any cause, fewer hospital readmissions for CHF, and fewer hospitalizations for any reason were observed in patients with CHF and diabetes in a number of retrospective investigations. A recent analysis found that the presence of CHF did not necessarily rule out the use of metformin and that it may even have a preventive impact by lowering death rates and CHF incidence in T2DM patients. This protective effect may result from myocardial fibrosis being reduced and AMPK being activated.

## CONCLUSION

393 metformin-treated patients with increased blood creatinine levels between 1.5 mg/dL and 2.5 mg/dL, coronary artery disease, CHF, or Chronic Obstructive Pulmonary Disease (COPD) were divided into two groups in a prospective, four-year research. One group was told to keep taking metformin, while the other was told to stop. Patients with CHF were being treated with diuretics and vasodilators and either had New York Heart Association (NYHA) Class III or Class IV CHF. All-cause mortality, cardiovascular mortality, myocardial infarction rate, or rate of cardiovascular events did not differ across groups.