**Prediabetes is a Risk Factor for Myocardial Infarction-A National Inpatient Sample Study**

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Introduction-Prediabetes is defined as Hba1c 5.7% - 6.4%, with an intermediate metabolic state and includes impaired glucose tolerance and impaired fasting glucose due to insulin resistance. While Type 2 Diabetes Mellitus is a well-established risk factor for cardiovascular disease, the possible link between Prediabetes and risk of Myocardial infarction (MI) has become a focus of interest in recent years. We wanted to evaluate if Prediabetes is independently associated with increased risk for MI.

Methods-We included adult patients admitted to teaching hospitals with a primary or secondary diagnosis of "acute myocardial infarction" from the National inpatient sample of 2016, 2017, and 2018. We created three separate multivariate logistic regression models with outcomes as MI, Percutaneous intervention (PCI), and CABG (Coronary artery bypass grafting).

Results-A total of 1,794,149 (95% CI 1,753,742-1,834,556) weighted hospitalizations with MI were included. Out of the 1.79 million patients with MI, 1% had Prediabetes. Prediabetes was greatly associated with increased odds for MI (OR 1.41, 95% CI 1.35-1.47, P=0.000). After adjusting for age, sex, race, family history of MI, dyslipidemia, hypertension, Diabetes, nicotine dependence, and obesity, Prediabetes was significantly associated with increased odds of MI (OR1.25, 95% CI 1.20-1.31, P=0.000), increased odds of PCI (OR 1.45, 95% CI 1.37-1.53, P=0.000) and increased odds of CABG (OR 1.95, 95% CI 1.77-2.16, P=0.000).

Discussion- Our study shows that Prediabetes may be an independent risk factor for MI despite adjusting for the well-established risk factors. Coronary interventions such as PCI and CABG were highly associated with Prediabetes, suggesting macrovascular CAD. This growing evidence indicates the need to identify patients with Prediabetes and aggressively manage their cardiovascular risk factors to prevent MI. Although Prediabetes is commonly missed during coding and adds a limitation to this study, we would highlight that the association of Prediabetes with Myocardial Infarction, PCI, and CABG is a significant addition to the literature. Our study serves as a wake-up call for clinicians and patients to shift the focus to preventing Prediabetes and not just Diabetes. Our findings reinforce the importance of early recognition by screening and early intervention of Prediabetes by lifestyle changes and/or medications to decrease the risk of cardiovascular events.

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