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Intra-Hospital Outcomes in ST Elevation Myocardial Infarction: Comparison of Diabetic and Non-Diabetic Patients

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►*Implication for health policy/practice/research/medical education:*
It is necessary to provide diabetics with necessary knowledge, so that they could decrease the possibility of cardiovascular diseases by carefully controlling their glucose level. In case of any cardiac symptoms also, they would be able to refer to a hospital for immediate intervention and treatment of their problem to decrease serious complications, such as heart failure, and mortality rate.

We read the interesting article entitled "the Effect of Diabetes Mellitus on Short Term Mortality and Morbidity after Isolated Coronary Artery Bypass Grafting Surgery" (1). We performed a study on intra-hospital complications in diabetic and non-diabetic patients with Acute Myocardial Infarction (AMI) in Birjand, east of Iran in 2012. In our study, 479 patients with AMI (243 diabetics and 236 non-diabetics) were assessed. The subjects' mean age was 61.95 ± 13.18 years. Assessment of intra-hospital complications in the two groups revealed that recurrent angina and mortality were significantly higher in the diabetics compared to the non-diabetics (52.5% vs. 39.3%, P = 0.009; 11.2% vs. 2.6%, P = 0.012, respectively). Besides, the mean Ejection Fraction (EF) was lower in the diabetics in comparison to the non-diabetics (45.26 ± 11.37% vs. 49.98 ± 10.39%, P = 0.014). Moreover, the incidence rates of intra-hospital mortality and heart failure were higher in the diabetics with AMI. This can be due to the higher prevalence of the associated risk factors, such as hypertension, dyslipidemia, and hyperglycemia, in diabetic patients and their effects on the heart.

Hyperglycemia occurring after AMI is a strong and independent prognostic marker of post-MI complications. Stress, which occurs following AMI, increases insulin resistance and hyperglycemia and decreases glucose tolerance. Un-controlled diabetes in patients having AMI is accompanied by an unfavorable prognosis and may increase the risk of life-threatening complications (2). The increased risk of complications can be a possible explanation for the increase in intra-hospital mortality after

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AMI is diabetic patients. Various studies have indicated that initial hyperglycemia associated with failure of ST segment resolution after streptokinase infusion is followed by more extensive infarction revealed in Single-Photon Emission Computerized Tomography (SPECT), less blood flow in coronary arteries in Thrombolysis In Myocardial Infarction (TIMI), dangerous ventricular arrhythmia (3), and higher intra-hospital mortality even after Percutaneous Coronary Intervention (PCI) (4). Moreover, a linear relationship has been reported between Fasting Blood Sugar (FBS) and AMI mortality (5).

Therefore, it is necessary to provide diabetic patients with necessary knowledge, so that they could decrease the possibility of cardiovascular diseases by carefully controlling their glucose level. In case of any cardiac symptoms also, they would be able to refer to a hospital for immediate intervention and treatment of their problem to decrease serious complications, such as heart failure, and mortality rate.

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