Predictors of Prolonged Hospital stay and In-Hospital Mortality in Diabetic Female Patient’s Post Primary Percutaneous Coronary Intervention, Tertiary Center Experience

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AIM:
Although females represent a smaller percentage of STEMI patients concerning gender, multiple studies demonstrate that female gender and diabetes mellitus have a bad prognosis and higher mortality in STEMI patients. We aimed in this study to determine the predictors of prolonged stay and mortality in diabetic female patients with post-primary percutaneous coronary intervention (PCI).

METHODS AND RESULTS:
The study was conducted as a part of the STEMI registry in our center, it is a retrospective single-center study conducted between 2015 and 2020 including all STEMI patients who underwent primary PCI.

Out of 3081 STEMI patients, 16 %(N= 498) were females, 64%(n-318) of them were diabetics. Diabetic patients tend to present with STEMI at a younger age with a higher prevalence of hypertension (78% vs 45%, p<0.001 for diabetic and non-diabetic patients respectively), obesity (40% vs 28%,p=0.006), dyslipidemia, and history of IHD (ischemic heart disease). Diabetic females had higher lipid profiles including LDL (115.8 ± 50 vs 115.3 ± 35 ,p=0.02), total cholesterol(186.3 ± 56 vs 179 ± 40 ,p=0.02), and triglycerides (149 ± 108 vs 119±76,p=0.04) , more troponin leak(262± 88 vs 156± 75,p=0.04), and a higher incidence of renal impairment(1.2 ± 1.5 vs 1 ± 0.7 ,p=0.003) although they had a lower incidence of hemoglobin drop post-primary PCI (3% vs 8%,p=0.02). Diabetic patients are less commonly presented by anterior wall myocardial infarction (47% vs 65%,p=0.001), But tend to have a higher prevalence of left main significant disease in comparison to non-diabetic patients(4% vs 1%.p=0.06), there was no significant difference(p<0.05) between both groups regarding in-hospital outcomes (pulmonary edema, cardiac arrest, etc.) and in-hospital mortality. Our study finds a significant negative correlation between glycosylated hemoglobin and left ventricular ejection fraction (LVEF) (p=0.02) but a positive correlation was noticed between HBA1c and in-hospital length of stay(p<0.001). Regression analysis showed that hemoglobin drop, creatinine level, and post- primary PCI were significant predictors of prolonged in-hospital stay>5 days. Though post- primary PCI left ventricular systolic function was the only significant independent predictor of mortality (P=0.02) in female patients post-primary PCI.

CONCLUSION:
Bleeding, renal impairment, and left ventricular systolic function post-primary PCI were discovered to be significant predictors of prolonged in-hospital stay >5 days, with
increased in-hospital stay per poor diabetic control. However, post-primary PCI left Ventricular systolic function was the only significant predictor of mortality among female patients post-primary PCI, with more LV function depression due to poor diabetic control.

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