

Performance of the TIMI Risk Score in Predicting Mortality after Primary Percutaneous Coronary Intervention in Elderly Women: Results from a Developing Country

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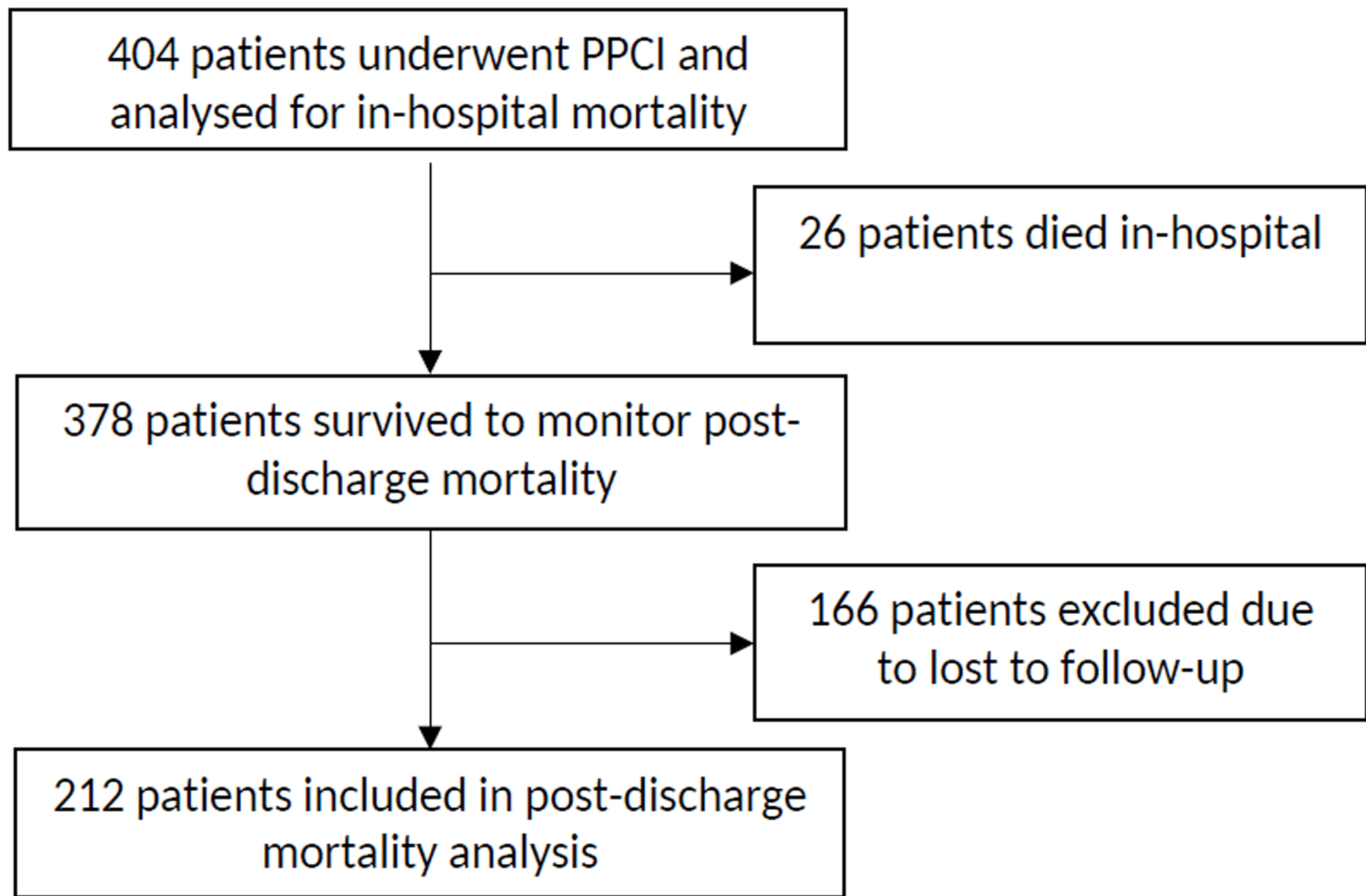
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Background:

Despite women undergoing primary percutaneous coronary intervention (PPCI) having a higher rate of adverse outcomes than men, data evaluating prognostic risk scores, especially in elderly women, remains scarce. A recent multicenter registry that included STEMI patients undergoing PPCI from 12 countries showed a remarkably higher 30-day mortality rate in women, as compared to men [1]. This study aimed to determine the predictive value of TIMI risk score and its prognostic significance; to profile the risk of mortality of elderly females who underwent PPCI in the largest ‘cardiac care center’ of Pakistan.

Methods:

This was a retrospective analysis of elderly (>65 years) female patients who underwent PPCI for ST-elevated myocardial infarction (STEMI) from October 2016 to September 2018. Patients’ demographic details and elements of TIMI risk score including age, co-morbidities, Killip classification; weight, anterior MI and total ischemic time were extracted from hospital records. The modified TIMI score, proposed by Morrow et al. [2], was calculated. The primary outcome was in-hospital mortality and post-discharge mortality reported on telephonic follow-up.

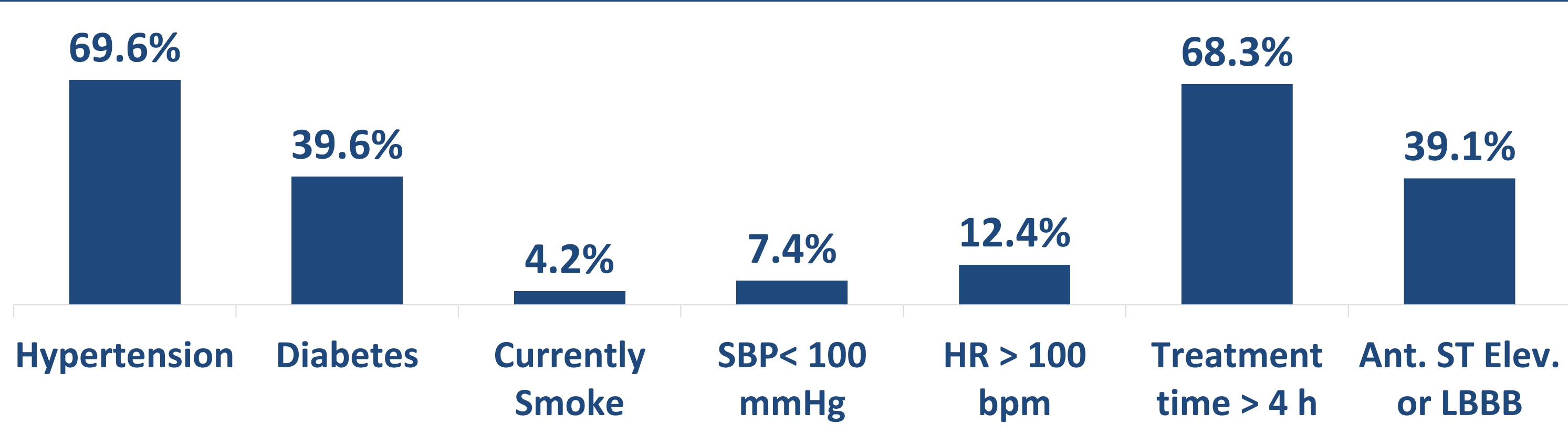


The predictive value of TIMI score was determined using area under the curve (AUC) of ROC curve and the optimal cut-off value for risk stratification was determined by computing the Youden Index.

Results:

A total of 404 elderly (≥65 years) women undergoing PPCI for STEMI were included in this study. Median age of the patients was 70 [75-65] years with 29.2% (118) of the patients aged 75 years and above.

Figure 1 –Risk Profile (n=404)



Predictive Value of TIMI Score

The mean TIMI score was 5.25±1.45 with 40.3% (163) patients of TIMI score > 5. In-hospital mortality rate was 6.4% (26/404) and post discharge mortality rate was 20.3% (43/212).

Figure 2 –In-hospital & post Discharge Mortality by TIMI Score

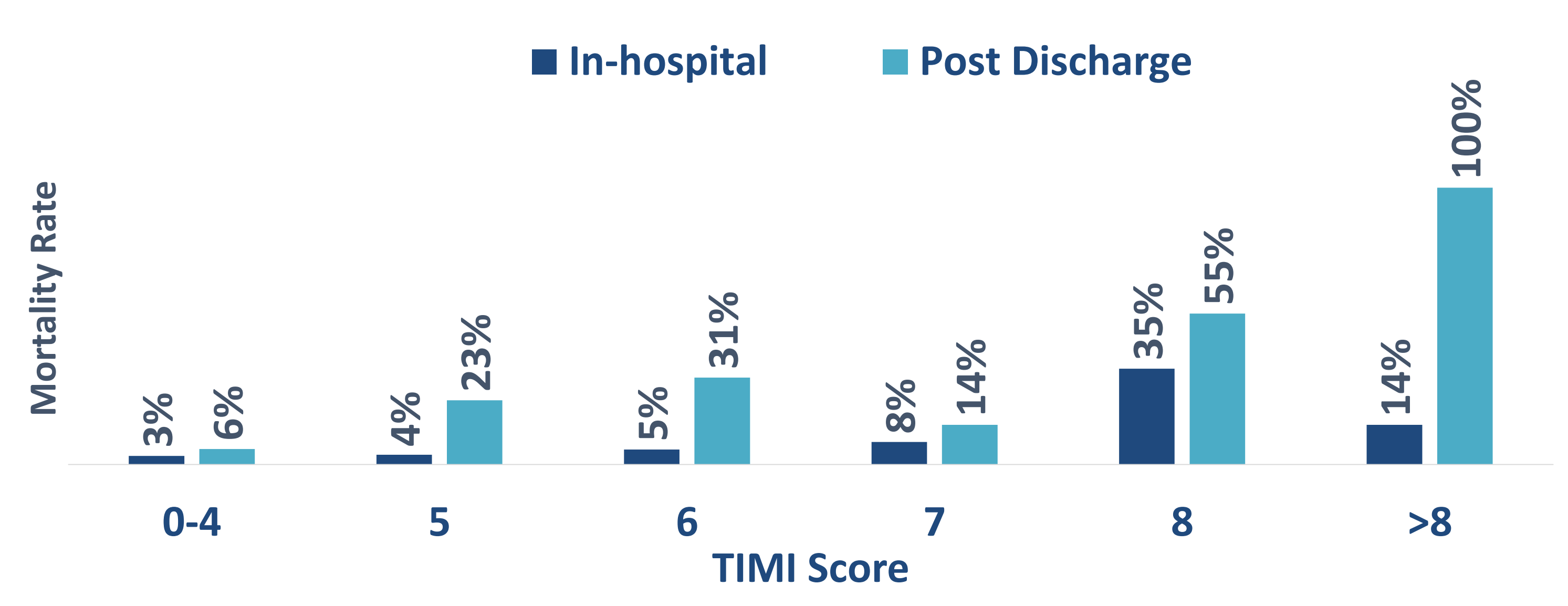
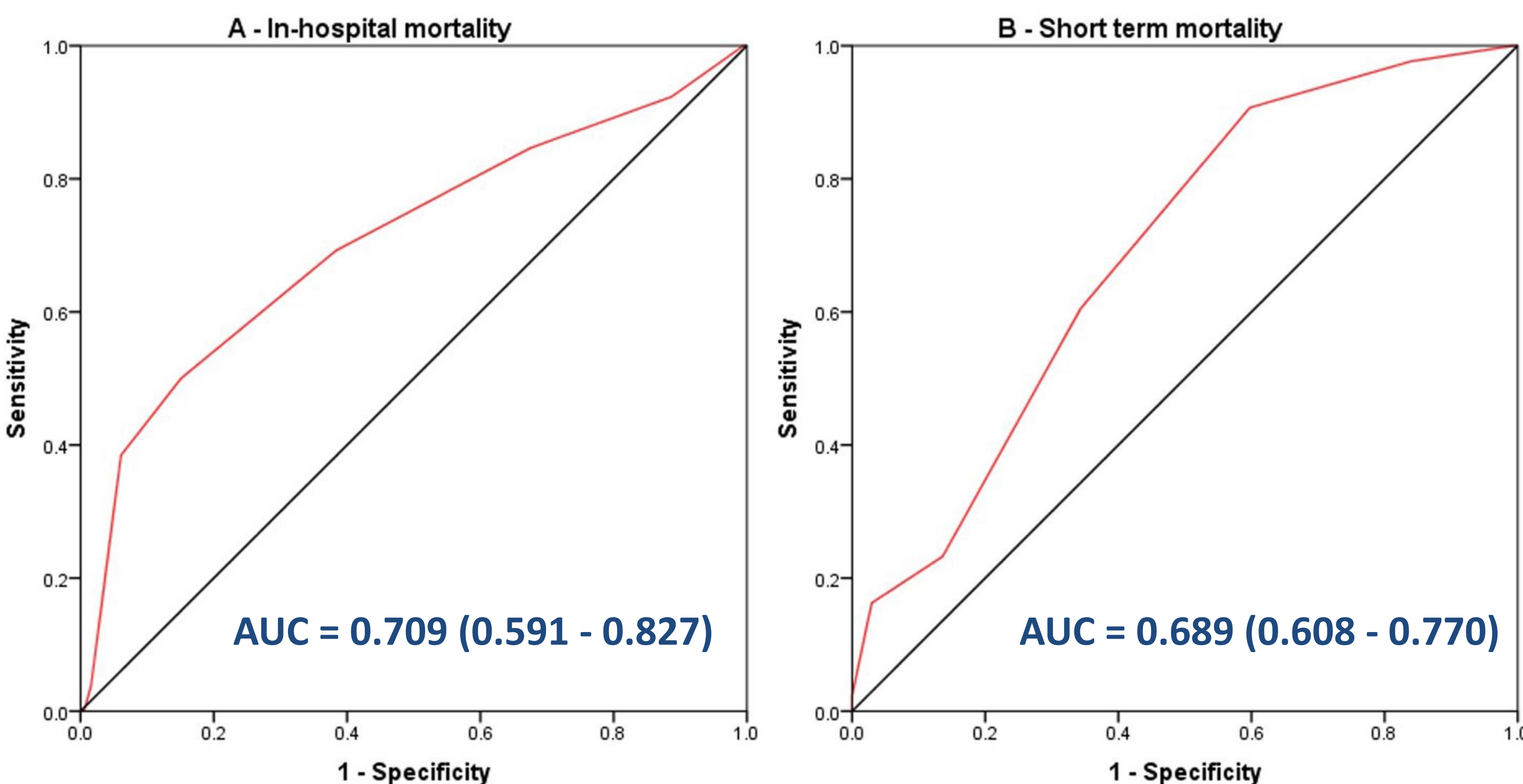


Figure 3 –ROC curve Analysis for In-hospital mortality and Short term mortality



Discussion on Results:

- Based on the Youden Index the optimal cut-off value of TIMI risk score was found to be 6 with sensitivity of 69.2%, specificity of 61.6%, and overall accuracy of 62.1%.
- In-hospital mortality was 11.0% (18/163) vs. 3.3% (8/241), p=0.001 and post discharge mortality was 31% (26/84) vs. 13.3% (17/128), p=0.001 for high risk (TIMI≥6) patients.
- TIMI score was found to be an independent predictor of post discharge and in-hospital mortality.

Conclusion:

Our study validates the accuracy of TIMI risk score in elderly female patients by corroborating both in-hospital and long-term discriminative value, suggesting the use of this score in clinical setting to provide targeted treatment and monitor prognosis of a high-risk patient accordingly.

Disclosure:

All authors have no conflict of interest to declare

References:

- Cenko E, Yoon J, Kedev S, et al. Sex differences in outcomes after STEMI: effect modification by treatment strategy and age. JAMA Intern Med. 2018 May 1;178(5):632–639.
- Morrow DA, Antman EM, Charlesworth A, et al. TIMI risk score for ST-elevation myocardial infarction: a convenient, bedside, clinical score for risk assessment at presentation: an intravenous nPA for treatment of infarcting myocardium early II trial substudy. Circulation. 2000 Oct 24;102(17):2031-7.