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Introduction

Little is known about the impacts of tenecteplase (TNK) on clinical outcomes in Malaysia. We aimed to evaluate the effectiveness and safety of TNK in patients presenting with ST-segment-elevation myocardial infarction (STEMI) in clinical practice at Taiping Hospital.

Materials and methods

This was a single-center retrospective case series based on medical records of STEMI patients who were admitted to the cardiac care unit at Taiping Hospital between January 2016 and May 2019. The mortality status and date were obtained via data linkage with the National Registration Department of Malaysia.

Results

Data of 30 patients with STEMI who were administered weight-adjusted TNK were analyzed. The patients' mean age was 62 years (SD±14 years), and 77% of them were males. The median time-to-treatment (TTT) was 265 min (IQR 228, 660) and the clinically successful thrombolysis (CST) rate was 79%. The overall all-cause in-hospital mortality rate was 33%. The patients with TTT ≤ 360 min had a lower all-cause in-hospital mortality (21%) compared to those with TTT > 360 min (50%) (p=0.12). Kaplan-Meier curves showed relatively higher 30-day- and 1-year-survival values in patients with TTT ≤ 360 min (p=0.20 and p=0.03, respectively). There was only 1 case (3%) of major bleeding requiring blood transfusion (HAS-BLED score=5). No instances of ischemic stroke, non-major bleeding, in-hospital reinfarction, and allergic reaction were reported.

Discussion / Conclusion

The mortality-related outcomes of TNK in STEMI were influenced by TTT, with TTT ≤ 360 min providing better prognosis. The bleeding-related complications caused by TNK were minimal, if administered to low-risk patients. Further study is needed to compare its profile with that of streptokinase, which is commonly used in the current clinical practice.

Table 1. Baseline characteristics of study groups based on time to treatment

Characteristics	≤360 min	>360 min	p-value
Number of patients (n)	19	10	
Female (%)	16	40	0.15
Age (years)*	63 (53, 71)	61 (57, 77)	0.60
DM (%)	37	60	0.23
Hypertension (%)	42	50	0.68
Previous MI (%)	47	40	0.71
Previous CABG	None	None	None
Systolic BP (mmHg)*	142 (117, 175)	131 (98, 170)	0.53
HR (beats/min)*	81 (58, 96)	87 (64, 106)	0.29
Door-to-needle time (min)*	120 (75, 205)	405 (191, 765)	0.02

DM diabetes mellitus, MI myocardial infarction, HR heart rate, BP blood pressure

*median (IQR)

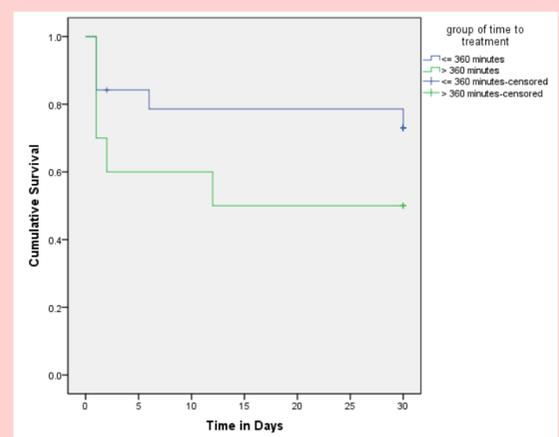
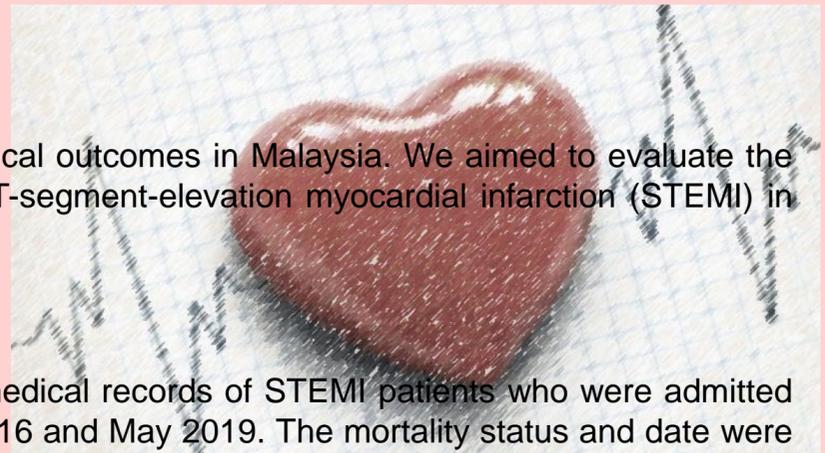


Fig 1 Kaplan-Meier survival curves for 30-days all-cause mortality

The curve for the group with TTT less or equal to 360 min is shown in blue line. The curve for the group with TTT more than 360 min is shown in green line. TTT time to treatment.

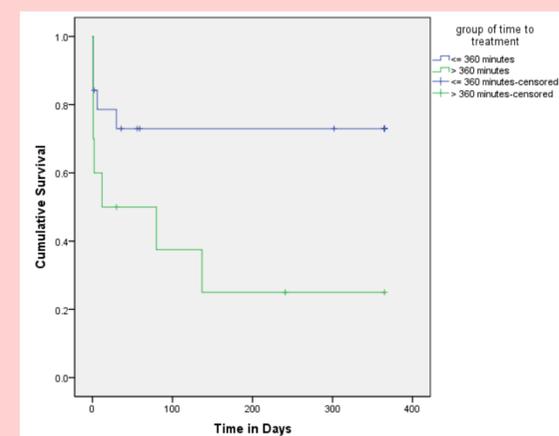


Fig 2 Kaplan-Meier survival curves for 1-year all-cause mortality

The curve for the group with TTT less or equal to 360 min is shown in blue line. The curve for the group with TTT more than 360 min is shown in green line. TTT time to treatment.

Acknowledgments

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