

Cost-Effectiveness Analysis of Fibrinolytic Therapy among ST-Segment Elevation Myocardial Infarction Patients in Indonesia

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ABSTRACT

Background:

Of all deaths caused by cardiovascular disease, half of them are caused by acute coronary syndrome disease which includes all ischemic symptoms including ST segment elevation myocardial infarction. Streptokinase and alteplase, each have advantages and disadvantages both from the economic, safety, and efficacy aspects that need to be considered in their use for STEMI patients.

Purpose: The aim of this study was to compare the effectiveness of using alteplase and streptokinase among STEMI patients in Indonesia.

Methodology:

This study uses a retrospective cohort method and a systematic review to evaluate clinical effectiveness, makes a decision tree analysis model for economic evaluation, analyzes the cost impact, and uses qualitative analysis to determine clinical preferences.

Results:

The proportion of patients with stable CAD in the Alteplase group was greater than in the Streptokinase group (87.37% vs. 62.50%). Based on this proportion, Alteplase is considered to be able to significantly reduce the incidence of MCC in STEMI patients when compared to patients receiving Streptokinase therapy (RR 1.398; 95% CI 1.058–1.848). The results of the analysis using the decision tree model showed that the incremental cost-effectiveness ratio (ICER) value of the use of Alteplase when compared with Streptokinase produced in this study was 24.27 million rupiahs per 1 stable CAD patient. The results of the qualitative data stated that there was no significant difference in the use of Alteplase or Streptokinase except for the time required for monitoring.