

## INTISARI

### **PREDIKTOR MORTALITAS DI RUMAH SAKIT PADA INFARK MIOKARD AKUT DENGAN ELEVASI SEGMENT ST**

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**Latar Belakang:** Infark miokard akut dengan elevasi segmen ST (IMA-EST) masih menjadi salah satu penyebab mortalitas tertinggi di dunia. Meskipun tingkat mortalitas di rumah sakit telah menurun pada dekade pertama abad ke-21, setelahnya penurunan tingkat mortalitas mencapai kondisi mendatar. Diperlukan strategi lain untuk menurunkan mortalitas ini, salah satunya dengan menganalisis prediktor mortalitas. Jenis prediktor mortalitas dipengaruhi oleh area geografi dimana penelitian dilakukan. Penelitian prediktor mortalitas di rumah sakit pada IMA-EST belum pernah dilaksanakan di RSUP Dr. Sardjito.

**Tujuan:** Untuk mengidentifikasi prediktor mortalitas di rumah sakit pada IMA-EST

**Metode:** Kami melakukan studi retrospektif observasional melibatkan pasien IMA-EST di RSUP Dr. Sardjito. Sebanyak 584 pasien IMA-EST diambil secara konsekutif dari register *Sardjito Cardiovascular Intensive Care* (SCIENCE) periode bulan Maret 2019 - Mei 2020. Dua puluh tujuh variabel diseleksi sebagai prediktor mortalitas di rumah sakit berdasarkan kajian pustaka dan data yang tersedia dalam register. Variabel dinilai berdasarkan *odds ratio* (OR) yang diperoleh dari analisis multivariat. Model prediktor dikembangkan dengan mengombinasikan parameter demografis, klinis, dan laboratorium yang dinilai segera saat diagnosis IMA-EST ditegakkan. Mortalitas di rumah sakit adalah mortalitas akibat sebab apapun selama indeks hospitalisasi.

**Hasil:** Tingkat mortalitas di rumah sakit adalah 12,1%. Dibandingkan pasien yang hidup, pasien yang meninggal memiliki usia lebih tua, riwayat diabetes melitus dan riwayat stroke lebih tinggi, rasio neutrofil limfosit, gula darah, dan kreatinin lebih tinggi, serta presentasi gagal kantung kiri (Killip III atau IV) lebih banyak. Analisis regresi logistik ganda menunjukkan beberapa variabel menjadi prediktor independen mortalitas di rumah sakit, yaitu jenis kelamin perempuan (OR 2,99), penurunan tekanan darah sistolik (OR 0,975), riwayat stroke (OR 2,57), kelas Killip III (OR 11,0), kelas Killip IV (OR 5,63), lokasi infark anterior (OR 2,33), lokasi infark anterior dan non anterior (OR 3,64), dan peningkatan kreatinin (OR 2,29). Uji *Hosmer and Lemeshow* menunjukkan kemampuan kalibrasi yang baik. Analisis kurva *receiver operating characteristic* (ROC) menunjukkan kemampuan diskriminasi yang baik dengan *area under the curve* (AUC) 0,861.

**Simpulan:** Jenis kelamin perempuan, tekanan darah sistolik, riwayat stroke, lokasi infark, kelas Killip, dan kreatinin adalah prediktor independen mortalitas di rumah sakit.

**Kata Kunci:** IMA-EST; Infark miokard; Mortalitas di rumah sakit; Prediktor; Stratifikasi risiko

## ABSTRACT

### PREDICTOR OF IN HOSPITAL MORTALITY IN ST-ELEVATION MYOCARDIAL INFARCTION

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**Background:** ST-elevation myocardial infarction (STEMI) remains a worldwide leading cause of high mortality. Although the incidence of in-hospital death declined up to the first decade of the twenty-first century, thereafter improvement in mortality appeared to plateau. Other strategy need to be found, one of is analyzing mortality predictor. Various predictive factors of mortality are obtained depending on the geographical area. Study predictor of in-hospital mortality in STEMI patients has never been done in Sardjito General Hospital.

**Objectives:** To identify predictors of in-hospital mortality in STEMI patients

**Methods:** We conducted an observational, retrospective study that included STEMI patients admitted to Sardjito General Hospital. A total of 584 consecutive STEMI patients from SCIENCE (Sardjito Cardiovascular Intensive Care) registry were recruited from March 2019 – May 2020. Twenty seven variables were selected as predictor of in-hospital mortality based on literature review and data availability in registry. Variables were scored based on each odds ratio (OR) obtained using multivariate analysis. A predictor model was developed by combining demographical, clinical, and laboratory parameters obtained immediately after admission. In-hospital mortality was defined as all-cause mortality during hospitalisation index.

**Results:** The overall in-hospital mortality rate was 12,1%. Compared with patients who survived, patients who died were more likely to be older, have higher rates of diabetes and previous stroke, higher neutrophil-lymphocyte ratio, blood glucose, creatinine level and demonstrate more evidence of acute left heart failure (Killip class III or IV). Multiple logistic regression analysis showed some variables became independent predictor of in-hospital mortality: woman (OR 2,99), previous stroke (OR 2,57), lower systolic blood pressure (OR 0,97), Killip III (OR 11,0), Killip IV (OR 5,63), anterior infarction (OR 2,33), anterior and non anterior infarction (OR 3,64), and increased of creatinine level (OR 2,29). Hosmer and Lemeshow test showed good calibration. Receiver operating characteristic curve analysis showed good prognostic discriminatory capacity with area under the curve (AUC) 0,861.

**Conclusion:** Woman, systolic blood pressure, previous stroke, Killip class, infarct location, and creatinine level were independent predictors of in-hospital mortality.

**Keywords:** STEMI; Myocardial infarction; In-hospital mortality; Predictor; Risk stratification.