

## COMPLETION REPORT

Demographic and medical characteristics of patients with heart failure in Indonesia:  
Study comparison with Japanese heart failure patients

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### Background

Heart failure (HF) is clinical syndrome as the final stage that attacks the heart organ. HF has become a major health problem in western countries because of the high prevalence, poor prognosis, and the burden of health costs.<sup>1,2</sup> Delima et al reported that the proportion of patients with HF was 0.31% in Indonesia,<sup>3</sup> but its prevalence is expected to equal the proportion in developed countries.<sup>4</sup> In Japan, study by Okura et al predicted that number of left ventricular dysfunction (LVD) patients reaching 1.3 million in 2030 will precipitate heart failure pandemic.<sup>5</sup>

### Methods

This study collected data of patients hospitalized with worsening HF in dr. Kariadi Hospital (RSDK), Semarang, Indonesia and compared to previous Japan registry using the same form of the Japanese Cardiac Registry of Heart Failure in Cardiology (JCARE-CARD) as described elsewhere.<sup>6</sup> The present study analyzed the acute phase data of (1) patients characteristics, (2) vital signs and laboratory data on admission, (3) medication use, and (4) length of stay. There were 75 patients in RSDK and 1677 patients in Japan.

### Results

**Patient characteristics** The mean age of the 75 studied patients was  $56.3 \pm 12.8$  years old and 60.0% were men. The mean age was younger in RSDK compared to Japan (56.3 vs. 70.7). The causes of HF were mostly due to ischemic heart disease, but it was higher in RSDK (65.3% vs 34.0%). The prevalence of other causes such as valvular heart disease, and dilated cardiomyopathy was similar between studies. The comorbidities were also similar such as hypertension (50–60%), diabetes mellitus (25–30%), dyslipidemia (20–25%), except for prior stroke being lower in RSDK.

**Clinical status on admission** Most patients had NYHA functional class III or IV symptoms in both studies. The mean systolic blood pressure (SBP) and diastolic blood pressure (DBP) was similar between studies, and also for laboratory data such as serum creatinine, electrolyte Na, and hemoglobin. But, plasma B-type natriuretic peptide (BNP) was higher on admission in RSDK ( $12493 \pm 9286$  vs.  $878 \pm 929$ ).

**Medication use before hospitalization and at discharge** The use of ACE inhibitors, ARBs, and  $\beta$  blockers was

increased at discharge compared to that before hospitalization in both studies. Moreover, the use of ACE inhibitors was lower and ARBs was more commonly used (25–30% versus 45-50%). The use of  $\beta$  blockers at discharge was lower in the RSDK (17.3% vs. 49.8%), but the use of aldosteron antagonist and statin was higher than Japan .

**Length of stay** Mean length of stay was much longer in Japan ( $33.9 \pm 34.9$  days) compared to  $7.9 \pm 3.9$  days in RSDK, and also for median length of stay (15 days vs. 7 days).

### Conclusions

The characteristics, clinical status, and laboratory data on admission in patients hospitalized with worsening HF were similar between dr. Kariadi Hospital (RSDK) and Japan, except for younger, higher ischemic etiology and lower beta blocker usage in RSDK. However, length of stay was longer in Japan compared to RSDK.

### References

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### Publication of the Results of Research Project:

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<p>Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.)  Submitting the research to national or international journal (in process)</p>
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