

# Hubungan malnutrisi yang diukur dengan Nutritional Risk Index terhadap perburukan fungsi ginjal pada pasien gagal jantung dekompensasi akut = Association between malnutrition as assessed with Nutritional Risk Index with worsening renal function in patients admitted with acute decompensated heart failure

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## Abstrak

[<b>ABSTRAK</b><br>

Latar Belakang. Malnutrisi merupakan salah satu masalah kesehatan utama yang banyak dijumpai terutama di negara berkembang. Malnutrisi pada pasien gagal jantung diketahui berhubungan dengan luaran klinis yang lebih buruk, meliputi peningkatan lama perawatan, readmisi dan mortalitas. Pada pasien gagal jantung dekompensasi akut (GJDA), perburukan fungsi ginjal (PFG) selama perawatan diduga merupakan komorbid yang memberikan dampak luaran klinis yang lebih buruk tersebut. Namun sampai saat ini belum diketahui bagaimana hubungan antara status malnutrisi dengan terjadinya PFG pada pasien GJDA. Oleh karena itu, penelitian ini bertujuan untuk mengetahui hubungan antara status malnutrisi dengan terjadinya PFG pada pasien GJDA, sekaligus untuk menilai besarnya pengaruh malnutrisi terhadap luaran klinis tersebut.

Metode. Studi kohort prospektif dilakukan di Rumah Sakit Jantung dan Pembuluh Darah Harapan Kita (RSJPDHK). Kejadian PFG didefinisikan sebagai peningkatan nilai kreatinin  $> 0,3$  mg/dL atau  $> 25\%$  dibandingkan kreatinin saat masuk rawat. Karakteristik dasar, pemeriksaan klinis awal, status antropometri dan data laboratorium diambil pada saat admisi. Pasien dibagi berdasarkan nilai NRI menjadi kelompok malnutrisi ( $NRI < 97,5$ ) dan tidak malnutrisi ( $NRI > 97,5$ ). Kemudian pemeriksaan serial kreatinin dilakukan dengan interval setiap 3 hari selama pasien menjalani perawatan di RS. Data kemudian diolah dengan analisis bivariat dan multivariat untuk mengetahui hubungan antara malnutrisi dengan PFG, lama perawatan, dan mortalitas.

Hasil Penelitian. Sebanyak 265 pasien GJDA diikutsertakan dalam penelitian ini, dengan proporsi kelompok malnutrisi sebesar 50,2%. Pada kelompok malnutrisi PFG terjadi pada 31,6% pasien, sedangkan pada kelompok tidak malnutrisi sebesar 26,5% pasien. Tidak didapatkan hubungan yang bermakna antara malnutrisi dengan kejadian PFG, namun terdapat kecenderungan peningkatan risiko PFG pada pasien GJDA yang disertai malnutrisi (OR 1,279; 95%IK 0,751-2,178;  $p=0,364$ ). Malnutrisi ditemukan memiliki pengaruh yang signifikan terhadap tingginya lama rawat (HR 6,254; 95%IK 4,614-8,477;  $p<0,001$ ) serta kematian pada pasien GJDA.

Kesimpulan. Penelitian prospektif ini tidak menemukan hubungan yang bermakna antara malnutrisi dengan PFG, namun didapatkan kecenderungan bahwa malnutrisi akan semakin meningkatkan risiko terjadinya PFG pada pasien GJDA. Pada pasien GJDA di RSJPDHK ditemukan proporsi malnutrisi yang sangat besar, dan malnutrisi pada kelompok ini memberikan kontribusi yang signifikan terhadap tingginya lama perawatan serta kematian.

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<b>ABSTRACT</b><br>

Background. Malnutrition is the leading cause of disease burden especially in developing countries.

Malnutrition in heart failure patients is associated with longer length of stay (LOS), higher readmission and mortality rates. Worsening renal function (WRF) has also been shown to contribute to the worsened outcomes in patients with acute decompensated heart failure (ADHF) patients. It is not known, however, whether malnutrition contributed to the worse outcomes in ADHF patient through the WRF. Accordingly, this study sought to investigate the association between malnutrition and WRF in ADHF patients.

**Methods.** A prospective cohort study was conducted in National Cardiovascular Center Harapan Kita (NCCHK) to all patients admitted with ADHF. WRF was defined as the occurrence, at any time during the hospitalization, of  $> 0,3$  mg/dL or  $> 25\%$  increase in serum creatinine from admission. Baseline and clinical characteristics, anthropometry status, and laboratory data were collected during hospital admission. Subjects were divided based on NRI into malnutrition ( $NRI < 97,5$ ) and no malnutrition group ( $NRI > 97,5$ ). Serial serum creatinine was evaluated within 3 days interval during hospitalization. Statistical analysis was done using bivariate and multivariate analysis to determine the association between malnutrition with WRF, LOS and mortality rates.

**Results.** Two hundred and sixty-five ADHF patients were included in this cohort study. Of those subjects, 50,2% were on malnutrition group. WRF occurred in 31,6% patients of malnutrition group and 26,5% patients of no malnutrition group. Although there was an increased probability of WRF occurrence in ADHF patients with malnutrition (OR 1,279; 95%CI 0,751-2,178;  $p=0,364$ ), but this increased probability was not statistically significant. Malnutrition was found significantly prolonged the LOS (HR 6,254; 95%CI 4,614-8,477;  $p<0,001$ ) and increased mortality rates in ADHF patients.

**Conclusion.** This prospective study demonstrated there was no significant association between malnutrition and WRF, but there was an increased probability of WRF occurrences in ADHF patients with malnutrition. Nevertheless, we found high burden of malnutrition in ADHF patients in NCCHK, and this burden contributed significantly to longer LOS and higher mortality rates in this population., Background.

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