

INTISARI

Latar belakang: *Contrast Induced Acute kidney injury* (CIAKI) adalah kondisi penurunan fungsi ginjal akut yang terjadi setelah pemberian media kontras dan merupakan kontributor yang signifikan untuk komplikasi jangka pendek maupun jangka panjang setelah intervensi koroner perkutan. *Neutrophil Gelatinase Associated Lipocalin* (NGAL) merupakan penanda dini yang dilaporkan sensitif dan non-invasif untuk CIAKI. Penelitian ini dilakukan untuk mengetahui insidensi dan risiko relatif terhadap kejadian CIAKI berdasarkan kadar NGAL serum pada pasien STEMI yang menjalani intervensi koroner perkutan (IKP) primer di RSUP Dr. Sardjito Yogyakarta.

Metode: Penelitian ini merupakan penelitian kohort prospektif. Subjek penelitian adalah pasien STEMI yang akan menjalani IKP primer di RSUP Dr. Sardjito yang memenuhi kriteria inklusi dan eksklusi. NGAL serum 24 jam pasca IKP primer diperiksa menggunakan metode ELISA. Subjek dibagi menjadi kelompok dengan kadar NGAL serum $>97,5$ ng/mL dan $\leq 97,5$ ng/mL. Kriteria CIAKI menggunakan definisi peningkatan kreatinin $>25\%$ *baseline* atau kenaikan kreatinin absolut $0,5$ mg/dL. Dilakukan penilaian risiko relatif terhadap kejadian CIAKI dengan 95%CI.

Hasil: Sebanyak 72 subjek diikuti dalam penelitian ini dengan 18 pasien (25%) mengalami CIAKI. Usia, kadar hemoglobin, albumin, BUN, kreatinin, eLFG, dan CRP secara signifikan berbeda pada kelompok dengan NGAL $> 97,5$ ng/mL. IMT dan albumin serum juga ditemukan signifikan berbeda pada kelompok CIAKI dan tanpa CIAKI. Kadar NGAL serum $> 97,5$ ng/mL memiliki risiko relatif sebesar 4,29 (95%CI: 1,157 – 7,992, $p=0,032$) terhadap kejadian CIAKI.

Simpulan: Pasien STEMI yang menjalani IKP primer memiliki insidensi CIAKI 25%. Pasien dengan kadar NGAL serum $> 97,5$ ng/mL yang diukur dalam 24 jam pasca IKP primer memiliki risiko kejadian CIAKI 4,29 kali lebih tinggi.

Kata kunci: CIAKI, NGAL serum, STEMI, intervensi koroner perkutan primer

ABSTRACT

Background: Contrast Induced Acute kidney injury (CIAKI) is an acute decline in kidney function that occurs after administration of contrast media and is a significant contributor to both short- and long-term complications after percutaneous coronary intervention. Neutrophil Gelatinase Associated Lipocalin (NGAL) is an early marker that is reported to be sensitive and non-invasive for CIAKI. This study was conducted to determine the incidence and relative risk of CIAKI based on serum NGAL levels in STEMI patients undergoing primary percutaneous coronary intervention (PCI) at Dr. Sardjito Hospital, Yogyakarta.

Method: A prospective cohort study. The research subjects are STEMI patients who will undergo primary PCI at Dr.Sardjito hospital who met the inclusion and exclusion criteria. Serum NGAL 24 hours after primary PCI was measured using ELISA method. Subjects were divided into groups with serum NGAL levels >97.5 ng/mL and ≤ 97.5 ng/mL. CIAKI defined by an increase in creatinine $>25\%$ baseline or an absolute creatinine increase of 0.5 mg/dL. Relative risk of NGAL in predicting CIAKI was carried out with 95% CI.

Result: A total of 72 subjects were included in this study with 18 patients (25%) having CIAKI. Age, hemoglobin, albumin, BUN, creatinine, eGFR, and CRP levels were significantly different in the group with NGAL > 97.5 ng/mL. BMI and serum albumin were also found to be significantly different in the CIAKI and without CIAKI groups. Serum NGAL $> 97,5$ ng/mL had a relative risk of 4.29 (95% CI: 1.157 – 7.992) in predicting CIAKI significantly ($p=0.032$)

Conclusion: The incidence of CIAKI in STEMI patients undergoing primary PCI was 25%. Patients with serum NGAL levels > 97.5 ng/mL measured within 24 hours after primary PCI had 4.29 times higher risk of CIAKI.

Keywords: CIAKI, serum NGAL, STEMI, PCI