ABSTRAK

Proteinuria dan Hematuria sebagai Prediktor *Acute Kidney Injury* pada Pasien COVID-19 (Studi di RSUP Dr. Kariadi Semarang Mei 2020 - Juli 2021)

Fitrina Aprilia[1], Dwi Lestari Partiningrum[2]

[1]Program Studi Ilmu Penyakit Dalam, Fakultas Kedokteran Unversitas Diponegoro, [2]Divisi Ginjal-hipertensi Bagian Ilmu Penyakit Dalam, Fakultas Kedokteran Universitas Diponegoro/RSUP Dr. Kariadi

Latar Belakang : Angka mortalitas meningkat seiring dengan kejadian *acute kidney injury* (AKI) pada Covid-19. Proteinuria dan hematuria telah dilaporkan berhubungan dengan Covid-19, namun data hubungan proteinuria dan hematuria dengan AKI yang terkait Covid-19 belum banyak diteliti.

Tujuan : Membuktikan hubungan proteinuria dan hematuria dengan AKI dan menentukan *cut off* proteinuria sebagai prediktor AKI pada pasien COVID-19 di RSUP dr. Kariadi Semarang.

Metode : Penelitian *cross sectional* melibatkan 248 pasien Covid-19 yang di rawat di RSUP dr. Kariadi Semarang pada Mei 2020 - Juli 2021. Pemeriksaan proteinuria dan hematuria dengan menggunakan urinalisis dan mengamati AKI. Data diolah menggunakan uji Pearson chi square, Kruskal Wallis, analisis regresi logistik multivariat dimana hasil signifikan bila $p < 0,05$ dan kurva ROC untuk menentukan nilai ambang proteinuria.

Hasil : Dari 248 subjek penelitian didapatkan 72 (29,0 %) proteinuria dan hematuria, 61 (24,6 %) proteinuria, dan 6 (2,4 %) hematuria. Proteinuria bersamaan dengan hematuria menunjukkan kejadian AKI paling tinggi (86,1 %) dibandingkan dengan salah satu yang positif (proteinuria/ hematuria) (preteinuria 65,6 %; hematuria 66,7 %). Terdapat hubungan bermakna terhadap proteinuria dan hematuria terhadap AKI ($p < 0,001$). Hasil analisis regresi logistik multivariat subjek dengan proteinuria bersamaan dengan hematuria berisiko lebih tinggi terjadi AKI (OR 16,6; CI95% 7,4-37,1) dibandingkan subjek dengan salah satu dari proteinuria/hematuria (OR 4,0; CI95% 2,1-7,6). Semakin tinggi nilai nilai protein dan nilai sel darah merah dalam urine, maka semakin tinggi derajat AKI.

Kesimpulan : Terdapat hubungan yang bermakna antara proteinuria bersamaan dengan hematuria dengan kejadian AKI.

Kata Kunci : Covid-19, proteinuria, hematuria, *acute kidney injury*

ABSTRACT

Proteinuria and Hematuria as a Predictor for Acute Kidney Injury in COVID-19 patients. (Study at Dr. Kariadi General Hospital Semarang May 2020 - July 2021)

Fitrina Aprilia[1], Dwi Lestari Partiningrum[2]
[1]*Internal Medicine Study Program, Faculty of Medicine, Diponegoro University, [2]Nephrology Division, Internal Medicine Department, Faculty of Medicine, Diponegoro University/Dr. Kariadi*

Background*: The mortality rate increases along with the incidence of acute kidney injury (AKI) in Covid-19. Proteinuria and hematuria have been reported to be associated with Covid-19, but lack of data on the association between proteinuria and haematuria with AKI associated with Covid-19.*
Objective*: To prove the association between proteinuria and haematuria with AKI and determine the cut off for proteinuria as a predictor of AKI in COVID-19 patients at dr. Kariadi Hospital Semarang.*
Methods*: Cross sectional study involving 248 Covid-19 patients at RSUP dr. Kariadi Semarang in May 2020 - July 2021. Proteinuria and haematuria were examined using urinalysis and observing AKI. Data were processed using the Pearson chi square test, Kruskal Wallis, multivariate logistic regression analysis where the results were significant if $p < 0.05$ and the ROC curve to determine cut off proteinuria.*
Results*: Of the 248 subjects, 72 (29.0%) had proteinuria and haematuria, 61 (24.6%) had proteinuria, and 6 (2.4%) had heamaturia. Proteinuria together with haematuria showed the highest incidence of AKI (86.1 %) compared with either proteinuria or haematuria (preteinuria 65.6 %; haematuria 66.7 %). There was a significant association between proteinuria and haematuria with AKI (p < 0.001). Results of multivariate logistic regression analysis subjects with proteinuria along with heamaturia had a higher risk of AKI (OR 16.6; CI95% 7.4-37.1) compared to subjects with either proteinuria/hematuria (OR 4.0; CI95% 2 .1-7.6). The higher the protein value and red blood cell count in urine, the higher stage of AKI.*
Conclusion*: There is a significant relationship between proteinuria together with hematuria and the incidence of AKI.*
Keywords*: Covid-19, proteinuria, hematuria, acute kidney injury*