

INTISARI

PENGARUH PEMBERIAN ASAM URAT TERHADAP GLOMERULOSKLEROSIS DAN CEDERA TUBULAR YANG DIINDUKSI DENGAN HIPERURISEMIA PADA MENCIT

Mohamad Sofyan S.¹, Nur Arfian², Wiwit Ananda W.S.² *Fakultas Kedokteran, Universitas Gadjah Mada, Yogyakarta, Indonesia*

¹*Mahasiswa Strata 1 Fakultas Kedokteran Universitas Gadjah Mada*

²*Bagian Anatomi, Embriologi, dan Antropologi Fakultas Kedokteran Universitas Gadjah Mada*

LATAR BELAKANG: Gagal ginjal menjadi permasalahan kesehatan masyarakat saat ini dikarenakan meningkatnya insidensi dan prevalensinya, kebutuhan biaya yang tinggi, serta *outcome* yang buruk. Gagal ginjal kronis ditandai dengan glomerulosklerosis dan cedera tubulus. Asam urat merupakan senyawa turunan purin. Belum diketahui hubungan antara hiperurisemia terhadap kejadian gagal ginjal kronis.

TUJUAN: Menelaah hubungan antara pemberian asam urat dengan glomerulosklerosis dan cedera tubulus ginjal.

METODE: Mencit jantan galur Swiss diinduksi dengan asam urat. Mencit diterminasi pada hari ke-21 (AU21; n=5) dan hari ke-28 (AU28; n=8). Skor cedera tubulus dan glomerulosklerosis dihitung berdasarkan pewarnaan menggunakan *Periodic Acid Schiff* (PAS).

HASIL: Perlakuan pemberian asam urat meningkatkan skor glomerulosklerosis pada AU21 dan AU28 ($p < 0,05$ vs SO), diikuti kenaikan skor cedera tubulus pada AU21 dan AU28 ($p < 0,05$ vs SO). Terdapat peningkatan skor glomerulosklerosis pada AU28 ($p < 0,05$ vs SO), disertai peningkatan skor cedera tubular pada AU28 ($p < 0,05$ vs SO).

KESIMPULAN: Durasi pemberian asam urat meningkatkan skor glomerulosklerosis dan cedera tubular. Hal ini menunjukkan bahwa asam urat memiliki peran dalam insidensi glomerulosklerosis dan cedera tubular.

KATA KUNCI: asam urat, induksi hiperurisemia, glomerulosklerosis, cedera tubular, mencit.

ABSTRACT

THE EFFECT OF URIC ACID ADMINISTRATION ON GLOMERULOSCLEROSIS AND TUBULAR INJURY INDUCED BY HYPERURICEMIA ON MICE

Mohamad Sofyan S.¹, Nur Arfian², Wiwit Ananda W.S.²
Faculty of Medicine, Gadjah Mada, Yogyakarta, Indonesia

¹*Undergraduate student, Faculty of Medicine, Gadjah Mada University*

²*Department of Anatomy, Embriology, and Anthropology, Faculty of Medicine, Gadjah Mada University*

BACKGROUND: Chronic Kidney Disease (CKD) is now a public health problem related to incidence and prevalence, high cost requirements, and poor outcomes. Chronic kidney disease is characterized by glomerulosclerosis and tubular injury. Uric acid is a purine-derived composition which related to Chronic Kidney Disease. However, the relationship between hiperuricemic to kidney damage have not been recognized precisely.

PURPOSE: To elucidate the effect of uric acid administration to glomerulosclerosis and tubular injury.

METHOD: Swiss male strain mice were induced with uric acid. Mice were terminated on 21st day (AU21; n = 5) and 28th day (AU28; n = 8). Tubular injury and glomerulosclerosis scores are calculated based on staining using Periodic Acid Schiff (PAS).

RESULT: Administration of uric acid led to an increase in glomerulosclerosis scores at AU21 and AU28 (p <0.05 vs SO), followed by increases in tubular injury scores at AU21 and AU28 (p <0.05 vs SO). There was an increase in glomerulosclerosis scores at AU28 (p <0.05 vs SO), accompanied by an increase in tubular injury scores at AU28 (p <0.05 vs SO).

CONCLUSION: Duration of uric acid induction increase the glomerulosclerosis score and tubular injury score. This suggests that uric acid has a role in the incidence of glomerulosclerosis and tubular injury

KEYWORDS: Uric acid, glomerulosclerosis, tubular injury, mice, hiperuricemia.