

INTISARI

PENGARUH ASAM URAT TERHADAP EKSPRESI *INTERCELULLAR ADHESION MOLECULES-1(ICAM-1)* DAN INFILTRASI MAKORFAG PADA HEPAR MENCIT (*Mus musculus*)

Latar Belakang:

Hiperurisemia tiap tahun terus meningkat prevalensinya di dunia. Keadaan hiperurisemia dikaitkan dengan peningkatan mortalitas. Hiperurisemia dikaitkan dengan penyakit *non alcoholic fatty liver disease* dan dikaitkan dengan keparahan penyakit hepatitis C kronis.

Tujuan:

Tujuan dari penelitian ini adalah mengetahui pengaruh asam urat terhadap inflamasi di hepar yang komponennya diukur melalui ekspresi ICAM-1 dan infiltrasi makrofag.

Metode:

Mencit jantan *Swiss background* (usia 3-4 bulan, berat 30-50 g) dibagi menjadi 3 kelompok, yaitu (1) kelompok Kontrol; (2) kelompok asam urat 125 mg/KgBB/hari selama 21 hari (AU21); dan (3) kelompok asam urat 125 mg/KgBB/hari selama 28 hari (AU28). Masing-masing kelompok berisi 4-5 mencit. Setelah mencit diterminasi, pengambilan sampel hepar dilakukan untuk ekstraksi RNA dan blok paraffin. Ekspresi ICAM-1 dan CD68 dinilai menggunakan *Reverse-Transcriptase* PCR(RT-PCR). Jumlah makrofag dinilai dengan pengecatan IHC CD68.

Hasil:

Terdapat peningkatan bermakna ekspresi ICAM-1 dan jumlah makrofag pada kelompok AU21($p<0,05$) dan AU28 ($p<0,05$) terhadap kelompok Kontrol. Peningkatan bermakna ekspresi ICAM-1 dan jumlah makrofag juga terdapat pada kelompok AU28($p<005$) terhadap kelompok AU21. Terdapat peningkatan bermakna ekspresi CD68 pada kelompok AU28($p<0,05$) terhadap kelompok Kontrol.

Kesimpulan:

Asam urat menyebabkan peningkatan ekspresi ICAM-1 dan infiltrasi makrofag pada hepar mencit.

Kata Kunci:

Asam urat, ICAM-1, CD68, makrofag

ABSTRACT

EFFECT OF URIC ACID TO INTERCULLAR ADHESION MOLECULES-1(ICAM-1) EXPRESSION AND MACROPHAGE INFILTRATION IN MICE LIVER(*Mus musculus*)

Background:

Worldwide, the prevalence of hyperuricemia has increased every year. Hyperuricemia has been associated with increased mortality. Hyperuricemia is associated with non-alcoholic fatty liver disease and associated with chronic hepatitis C disease severity.

Aim:

This study is aimed to determine the effect of uric acid on inflammation in the liver whose component measured by expression of ICAM-1 and macrophage infiltration.

Method:

Male Swiss background mice (aged 3-4 months, weighted 30-50 g) were divided into 3 groups, namely (1) Control group; (2) uric acid 125mg/KgBB/day for 21 days (AU21); (3) uric acid 125mg/KgBB/day for 28 days (AU28). Each group contained 4-5 mice. After the mice were terminated, liver sample were taken for RNA extraction and paraffin block. The expression of ICAM-1 and CD68 were assessed using Reverse-Transcriptase PCR(RT-PCR). Total macrophage was assessed by CD68 IHC staining.

Results:

There was a significant increase in the expression of ICAM-1 and total macrophage at AU21 group ($p<0,05$) and AU28 group ($p<0,05$) compared to the Control group. Significant increase in the expression of ICAM-1 was also seen on AU28 group ($p<0,05$) compared to the AU21 group. There was a significant increase in the expression of CD68 on AU28 group ($p<0,05$) compared to the AU21 group.

Conclusion:

Uric acid increases ICAM-1 expression and macrophage infiltration in mice liver.

Keywords:

Uric acid, ICAM-1, CD68, macrophage