ABSTRAK

Latar belakang :

Penderita penyakit hati kronis semakin bertambah dari waktu ke waktu, namun belum ada terapi yang benar-benar efektif untuk mengobatinya. Oleh karena itu, saat ini banyak dikembangkan penelitian yang menggali potensi tanaman yang diduga memiliki efek antifibrotik. Salah satunya adalah buah delima (*Punica granatum L.*).

Tujuan :

Tujuan dari penelitian ini adalah menganalisis pengaruh ekstrak buah delima pada fibrosis hati akibat obstruksi bilier pada tikus putih. Fibrosis hati diinduksi dengan teknik *bile duct ligation* (BDL). Pemeriksaan dilakukan terhadap kolagen tipe I dan derajat fibrosis hati,

Metode penelitian :

Tigapuluh dua ekor tikus putih jantan (*Rattus norvegicus*), umur 2,5 bulan dan memiliki kisaran berat badan 160-190 gram dibagi menjadi empat kelompok perlakuan. Kelompok pertama (P0) adalah kelompok tikus laparatomi yang diberi larutan *carboxy methyl cellulose* (CMC) 0,3% sebanyak 2 ml. Tiga kelompok yang lain adalah kelompok yang dilaparatomi dan *bile duct ligation* (BDL), tetapi mendapat perlakuan yang berbeda. Kelompok P1 diberi larutan *carboxy methyl cellulose* (CMC) 0,3%, P2 diberi *ellagic acid* (EA) 60 mg/kgbb/po/hari dan P3 diberi ekstrak buah delima terstandar 150 mg/kgbb/po/hari dalam CMC 0,3% dengan volume yang sama. Pemberian perlakuan dilakukan hari kedua setelah BDL dan diberikan selama 21 hari. Hati dieksisi satu hari setelah pemberian terakhir.

Hasil :

Hasil penelitian menunjukkan bahwa pemberian ekstrak buah delima terstandar dapat menghambat ekspresi kolagen tipe I secara bermakna pada kelompok P2 dan P3 bila dibandingkan dengan kelompok P1 ($p<0,05$). Pemberian ekstrak buah delima secara signifikan juga dapat menghambat perkembangan fibrosis hati bila dibandingkan dengan P1, walaupun masih lebih tinggi bila dibandingkan P0 ($p<0,05$). Derajat fibrosis hati tidak berbeda nyata antara P3 dengan P2 dan antara P2 dengan P1 ($p>0,05$).

Kesimpulan :

Pemberian ekstrak buah delima 150 mg/kgbb/po/hari memiliki efek antifibrotik dengan cara menghambat peningkatan ekspresi kolagen tipe I dan derajat fibrosis hati.

Kata kunci : buah delima, kolagen tipe I, derajat fibrosis.

ABSTRACT

Background:

The number of patients with chronic hepatitis increases from time to time, however no therapy which is very effective in treating it has been developed. Therefore, currently many researches are being carried out to explore the components in herbs thought to possess antibiotic effect. Among them is the pomegranate fruit (Punica granatum L.).

Objective:

The objective of this study was to analyse the effect of standadized pomegranate fruit extract on liver fibrosis due to biliary obstruction in rats. Liver fibrosis was induced by bile duct ligation (BDL) technique. Examinations were performed on the expressions of type 1 collagen and the degree of liver fibrosis.

Method:

Thirty two male albino rats (*Rattus norvegicus)*, 2,5 months old weighing 160-190 grams were divided into four experimental groups. The first group (P0) consisted of rats which underwent laparotomy and treated with 2 ml of *carboxymethyl cellulose* (CMC) 0,3%. Three other groups consisted of rats which underwent laparotomy and bile duct ligation (BDL) but received different treatments. Group P1 was given *carboxymethyl cellulose* (CMC) 0,3%, P2 was given *ellagic acid* (EA) 60 mg/kgBW/po/day and P3 was treated with standardized pomegranate fruit extract 150 mg/kgBW/po/day within CMC 0,3% of equal volume. Treatments were administered on the second day after BDL for 21 days. The livers were excised one day after the last administration.

Result:

The results showed that administration of standardized pomegranate extract can inhibit the expression of type I collagen significantly in the P2 and P3 compared with P1 group ($p < 0.05$). Treatment with standardized pomegranate fruit extract also significantly suppressed the progression of liver fibrosis compared to P1, eventhough there was more liver fibrosis compared to P0 ($p<0,05$). The degree of liver fibrosis was not significantly different between P3 and P2, and between P2 and P1 ($p>0,05$).

Conclusion:

The administration of standardized pomegranate fruit extract 150 mg/kgBW/po/day exerted antifibrotic effect by inhibiting an increase of collagen type 1 and the degree of liver fibrosis.

Keywords: pomegranate fruit, collagen type I, degree of liver fibrosis.