Efek penggunaan ekstrak etanol akar acalypha indica sebagai antihiperkolesterolemia terhadap perubahan histopatologi jaringan hati tikus hiperkolesterolemia = Effect of acalypha indica root extract as antihypercholesterolemia in histopathological changes of hypercholesterolemia liver tissue of rats

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Abstrak

ABSTRAK
Hiperkolesterolemia adalah kondisi gangguan metabolik yang sering dijumpai pada masyarakat dunia. Karena berkaitan erat dengan insidensi dislipidemia dan penyakit kardiovaskular, berbagai peneliti telah mencoba untuk menemukan terapi farmakologi terbaik untuk menurunkan kadar kolesterol. Diantara beberapa obat pilihan utama adalah asam fibrat. Saat ini dikembangkan pengobatan dengan tanaman tradisional, salah satunya adalah Acalypha indica. Tanaman ini terbukti untuk penyembuhkan pneumonia, artritis, dan infeksi. Polifenol dan flavonoid yang terdapat dalam Acalypha indica diduga berperan penting dalam efek antihiperkolesterolemia yang dimilikinya. Diharapkan juga kandungan pada tanaman ini dapat menurunkan efek samping penggunaan obat konvensional. Uji preklinis ini bertujuan untuk mengetahui efek antihiperkolesterolemia dari ekstrak etanol akar Acalypha indica pada perlemakan hati, dibandingkan dengan terapi asam fibrat. Dua puluh dari dua puluh lima tikus Sprague-Dawley diinduki diit tinggi kolesterol-fruktosa selama empat minggu hingga mencapai kondisi tinggi kolesterol. Sampel dibagi menjadi lima grup berdasasrkan intervensinya, yakni kontrol positif, kontrol negatif, terapi gemfibrozil, terapi ekstrak Acalypha indica, dan terapi kombinasi gemfibrozil dan ekstrak Acalypha indica. Tikus kemudian diterminasi pada akhir periode intervensi. Hati tikus diambil dan diproses dengan blok parafin dan pewarnaan hematoksilin-eosin. Jaringan hati dinilai dengan kriteria Clinical Research Network Scoring untuk Steatohepatitis non alkoholik (NASH). Ekstrak Acalypha indica menurunkan deposisi lemak secara signifikan (p = 0,014), sama baiknya dengan terapi gemfibrozil (p = 0,003) dan terapi kombinasi (p = 0,003). Ekstrak etanol akar Acalypha indica merupakan agen antihiperkolesterolemia yang cukup menjanjikan untuk mengurangi deposisi lipid dan kejadian steatohepatitis non alkoholik pada jaringan hati tikus.
<hr><i>ABSTRACT
Hypercholesterolemia is a common metabolic disorder found worldwide. As it is highly associated with dyslipidemia and cardiovascular disease incidence, researchers have been trying to find the best pharmacological therapy to lower cholesterol level. Among the first line choices drugs are fibrate. Acalypha indica, known as ?Akar Kucing? in Indonesian language, is a traditional plant used as medicine in most Asia countries. Previously, it has been proved to help to cure pneumonia, arthritis, and infection. Polyphenol and flavonoid found in Acalypha indica are considered to play an important role in its antihypercholesterolemia effect. It is also expected to have lower side effect than conventional drugs. This preclinical trial was aimed to investigate antihypercholesterolemia effect of Acalypha indicaroot extract on fatty liver tissue, compared to fibrate treatment. Sixteen from twenty Sprague-Dawley rats were induced with high cholesterol-fructose diet for four weeks to reach fatty liver state. Samples were divided into four groups based on its

intervention. Each group was processed with a four-week therapy with Acalypha indicaroot extract, gemfibrozil, combination of Acalypha indicaroot extract and gemfibrozil, and without any therapy, respectively. Rats were terminated at the end of intervention period. Liver were taken and processed with paraffin block and hematoxylin-eosin stain. Liver tissues were assessed using Clinical Research Network Scoring for Non Alcoholic Steatohepatitis (NASH). Result: Acalypha indicaroot extract significantly reduced lipid deposition in fatty liver tissue ($p = 0,014$), as good as fibrate therapy using gemfibrozil ($p = 0,003$) and fibrate-Acalypha indica therapy ($p = 0,003$). Acalypha indica root extract is promising for use as antihypercholesterolemia agent to reduce lipid deposition and Non Alcoholic Steatohepatitis incidence in fatty liver tissue.</i>