Drug interaction study in hospitalized hepatic cirrhosis patient in Dr. Ramelan navy hospital

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Abstract

Cirrhotic liver lead to some changes in pathophysiology such as reduction in liver blood flow, decrease some metabolic and synthetic function of the liver. Also there is a change in endothelial lining from hepatic sinusoid. These changes result in some consequences that are increase in drugs sensitivity and adverse events due to pharmacokinetic and pharmacodynamic influences. Treatments for complications cirrhosis induce polypharmacy. Therefore, hepatic cirrhosis patient are at risk for serious drug interactions. The outcome can be harmful if the inteactions causes an increase in the toxicity of the drug. To study drug interaction events from drug therapy in hospitalized hepatic cirrhosis patient. Samples were collected using purposive sampling methods. Both drug therapy and disease progress were followed prospectively until patient discharged from the hospital. Drug interactions events were recorded and evaluated according to some literature. Patients involved in this study were 85. The total number of drug interactions occured in this study were 5 cases (5,88%). All events is potential drug interactions. Potential drug interaction involved spironolactone, furosemide, kalium supplement, aminophylline, ranitidine, and digoxin. This study demonstrates that potential drug interactions were common among hepatic cirrhosis patient, and pharmaceutical care capable in reducing drug interactions events.

Keywords : drug interaction; hepatic cirrhosis

Introduction

Cirrhosis is defined as a diffuse process characterized by fibrosis and a conversion of the normal hepatic architecture into structurally abnormal nodules.[1]

In cirrhosis, scar tissue replaced the normal tissue, disrupted the blood circulation that through the liver.[2]

Cirrhosis was the cause of the biggest death of the nine in United States and 1,2% from all the deaths in United States.[3] Cirrhosis affects 3.6 per 1000 adults in the United States and is responsible for 26,000 deaths per year.[1]

The pathophysiologic changes that occur in patients with cirrhosis, including reduced liver blood flow, altered microcirculatory distribution of blood flow within the liver, diminished metabolic and synthetic function, and changes in the endothelial lining of the sinusoids, can have a significant impact on each of these factors.[1] Finally, patients with cirrhosis frequently accumulate large amounts of interstitial fluid resulting in substantial changes in the volume of distribution, which also prolongs drug half-life.[1,4] Moreover, the production from protein that was produced in the liver experienced the decline so as the free drug fraction in blood increased because a little that binding with protein. The increase in the free drug fraction in blood will influence clirens of renal and hepatic like the volume of the distribution of medicine that the association of his protein was high.[4] This caused the patient cirrhosis more was sensitive to the medicine and the side-effect.

The major complications of cirrhosis include ascites,[1,5,6,7,8,9,10] portal hypertension and variceal bleeding [1,7,11] hepatic encephalopathy (HE),[1,11] spontaneous bacterial peritonitis (SBP),[1,8,7,11] hepatorenal syndrome,[1] and coagulation disorders.[1] Other less commonly seen problems in patients with cirrhosis include peptic ulcer disease,[12,13] hepatopulmonary syndrome,[14] and insulin resistance in diabetes mellitus type 2.[15] So the treatments for complications cirrhosis induce polypharmacy.

The patient with the disturbance of the function of the liver such as cirrhosis was risky received the problem because of the effect of medication that was used experienced drug-