HEPATOPROTECTIVE EFFECT OF RED RICE AND PRICKLY PEAR ON CCL_4TREATED RATS

By

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B.Sc. Home Economics, Fac. Home Economics, El -Azher Univ., 1998
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APPROVAL SHEET

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Date: -/ - / 2013

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ABSTRACT

The present investigation was carried out to study the formulation on different diets (blenderized) for cirrhotic liver and hepatic coma patients. The formulas were chemically and biologically evaluated. Moreover, the daily requirements of these patients as provided by the prepared formulas were evaluated. These formulas were designed to cover the daily nutrient requirements of patients.

Chemical analysis showed that the prepared formula 2 (for cirrhosis) contained carbohydrates, protein, fat, ash and crude fiber (67.58, 18.04, 7.72, 2.63 and 2.51%), respectively, While formula 4 prepared for hepatic coma disease contained 82.67, 6.05, 6.49, 2.21 and 1.57% for carbohydrates, protein, fat, ash and crude fiber, respectively. All prepared formulas had lower values of Na content ranged from 27.38 to 27.88 mg / 100g. While they had high potassium content, ranged from 374.38 to 623.88 mg /100g for formulas 3 and 4 respectively. Formulas 1, 2 and 3 contained high branched amino acids. Formula 4, 5 and 6 showed higher total solids compared to the others. The highest T.S value was 16.7% ± 0.949 for formula 4 while the lowest was 13.4 ± 0.15 for formula 2. Data showed that color values ranged from 82.61 to 102.03. No significant difference between formula 1 and 2 was found. All formulas were safe from pathogenic microbes.

Concerning effect of prepared formulas on liver cirrhotic rats, the results showed that liver protective effect of special formulas (1, 2 and 3) as assessed by CCl_4 which induced liver damage in Wister albino rats. The three prepared formulas reduced the changes in body weight and liver weight caused by CCl_4 in rats. The toxicity of CCl_4 is related to loss in body weight and the increase in liver weight in rats. The ratios of liver weight to body weight (LW/BW) were significantly increased in rats treated with CCl_4 followed by other groups. Formula 1, 2 and 3 could play an important role in improvement of hematological indices in liver cirrhosis of rats. The treated rats fed on special formulas showed improving in liver function compared to rats fed basal diet, reflected by significant reduction of the activity of transaminases (ALT and AST), Alkaline phosphatase (ALP) and total bilirubin. There was a significant increase in total protein, albumin and globulin in serum. There are no histopathological changes in all groups under study except for group 5 (treated rats with CCl_4 and fed basal diet) which orally administrated with CCl_4 and had congestion of central vein and hepatic sinusoids.

Key words: Liver cirrhosis, CCl_4, formulas, liver function, histopathological, hepatoprotective.

DEDICATION

I dedicate this work to whom my heart felt thanks, to my parents, my husband, my daughters Tasneem and Jana, my sisters and brothers for instilling in me the values of hard work. Their prayers, love, concern and pride in my work were always a major source of strength to me and their support made an everlasting impression on my life and for courage to complete this project successfully.

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CONTENTS