EFFECT OF GIVING ETHANOL JENGKOL SEEDS (Pithecellobium lobatum Benth.) ON THE IMPROVEMENT OF UREUM AND CREATININE LEVELS OF WHITE RAT

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INTRODUCTION

Diabetes Mellitus is one of the non-communicable diseases that will increase in number in the future. This is presumably because the people's lifestyle in consuming a lot of foods that contain protein, fat, sugar, salt and a little fiber. Suyono, 2010. One type of plant that can be used as a diabetes mellitus drug is the jengkol plant. The jengkol plant contains several chemical compounds such as flavonoids, tannins and saponins. Flavonoids have antioxidants.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

According to research (Elysa, 2011) jengkol seeds have an effect on reducing glucose levels in mice, but it does not explain whether the dose used is safe and does not cause toxicity. Jengkol poisoning is acute kidney failure. Jengkolat acid contained in jengkol can form crystals that settle and cause obstruction in Jha et al. 2008. Obstruction in the urinary tract is one of the causes of acute kidney failure. To confirm the diagnosis of acute renal failure, it is necessary to examine renal function, namely examining the levels of serum urea and creatinine Molitoris 2009.

In diabetics the incidence rate for cases of acute complications is still very high. Acute complications in diabetes are diabetic ketoacidosis (DKA) and hyperglicaemic hyperosmolarity (HHS). Chronic complications from diabetes can include vascular complications, which are divided into microvascular and macrovascular. Macrovascular, namely coronary artery disease, lower limb blood vessels and macrovascular, namely retinopathy, nephropathy, and others. (Waspadji, 2010).

3. RESEARCH METHODOLOGY

This research is an experimental research with the design of Post Test Only Control Group Design. A sample of 25 adult male white rats (*Rattus norvegicus*) *Sprague Dawley* strain for each treatment, aged 3- 4 months, weighing 200 - 2500 grams. Divided into 5 treatment groups, namely 1). In the negative control group, rats were only given distilled water orally without alloxan induction. In the second group the mice were given distilled water orally and alloxan induced intraperitoneally. The third group was treated with the ethanol extract of jengkol seeds with a dose of 600 mg / kgbb orally and induced by alloxan. In the fourth group treated with the ethanol extract of jengkol seeds at a dose of 900 mg / kgbb orally and induced by alloxan. In the fifth group treated with the ethanol extract of jengkol seeds at a dose of 1200 mg / kgbb orally and induced by alloxan. The treatment was given for 14 days. Blood samples were taken at the end of the study. The blood sample was collected using a red top vacuntainer tube, centrifuged for 10 minutes at a speed of 4000 rpm, then the urea and serum creatinine were examined by spectrophotometry.

Effect Of Giving Ethanol Jengkol Seeds (Benth.) On The Improvement Of Ureum And Creatinine Levels Of White Rat

4. RESULTS AND DISCUSSIONS

Table 1. One-way ANOVA test results blood glucose levels

	Sum of Squares	Df	Mean Square	F	Sig
Between Groups	1204,400	4	301,100	2491	,076
Within Groups	2417,600	20	120,880		
Total	3622,000	24			

In the ANOVA test results table, the p value is obtained = 0.076, which means there is no difference in urea levels between groups.

Table 2. Urea Levels Normality Test Results

GROUP		*Shapiro-Wilk*		
		Statistics	df	Sig.
Ureum	I	,927	5	,573
	II	,834	5	,149
	III	,816	5	,109
	IV	,928	5	,586
	V	,885	5	,332

In the table of normality test results, the p value for the five groups is> 0.05, so it can be concluded that the distribution of the three groups is normal.

Table 3. One-way ANOVA test results creatinine levels

	Sum of Squares	Df	Mean Square	F	Sig
Between Groups	1204,400	4	301,100	2491	,076
Within Groups	2417,600	20	120,880		
Total	3622,000	24			

Table 4. Result of Normality Test of Creatinine Levels

GROUP		*Shapiro-Wilk*		
		Statistics	df	Sig.
Creatinine	I	,987	5	,967
	II	,961	5	,814
	III	,932	5	,607
	IV	,956	5	,777
	V	,961	5	,814

In the table of normality test results, the p value for the five groups is> 0.05, so it can be concluded that the distribution of the three groups is normal.

The results showed that the treatment group was not so significant, with a p value> 0.05, meaning that there was no significant difference in urea levels between the study groups. Ureum is not an ideal index of renal function because many events outside the kidney affect plasma levels. However, examination of plasma urea levels is still important and necessary in patients with kidney disease, especially to evaluate the effect of dietary protein restriction.

The results of creatinine levels in the treatment group and 2 control groups did not show any significant difference. It can be seen that the value of p> 0.05 means that there is no difference in creatinine levels between groups. However, if we look at the creatinine level in group 5, it has passed the limit of normal creatinine levels in mice with a value of 0.86. This indicates that a dose of 1200 mg / kgbb causes a decrease in renal function as indicated by an increase in creatinine levels> 0.3 mg / dl.

Several factors that can affect creatinine levels are gender, hunger conditions, and Guyton and Hall 2007 muscle tissue size. In addition, strenuous exercise and surgical procedures that damage skeletal muscles can increase the 2011 Ministry of Health's creatinine levels.

5. CONCLUSION

Giving jengkol seed ethanol extract at a dose of 1200 mg / kgbb can cause a decrease in renal function, which is indicated by an increase in urea levels> 0.3 mg / dl in Sparague Dawley rats induced by alloxan

LIMITATION AND STUDY FORWARD

This research is expected to be the basis for further researchers regarding jengkol extract as a therapy for kidney failure

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