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Consumer Protection
"Law and Pharmacy Perspectives"



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Consumer Protection: "Law and Pharmacy Perspective"



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Consumer Protection: “Law and Pharmacy Prespective”

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DESCRIPTION OF LIVER FUNCTION OF SCHIZOPHRENIA PATIENTS' TREATED BY ANTIPSYCHOTIC IN PRIVATE REHABILITATION CENTERS, YOGYAKARTA

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ABSTRACT

Background: Schizophrenia is a chronic heterogeneous syndrome which is characterized by irregular mindset, delusions, hallucinations, and the presence of psychosocial disorders. Antipsychotic is important to the treatment of schizophrenia, to overcome symptoms, and to prevent recurrence. Treatment of schizophrenia require a long time even a lifetime so will cause unwanted effects, such as adverse affects on liver function. The aim of the research was to describe the liver function of schizophrenia patients' at Kulon Progo.

Methods: This study was observational research with descriptive design. Data were collected prospectively by looking at the results of liver function by measuring the levels of AST (SGOT) and ALT (SGPT). The population was all patients with schizophrenia who met the inclusion criteria in private rehabilitation centers in Kulon Progo during the period from June to September 2012. The examination was done twice within two months. Examination conducted using UV test according to IFCC (International Federation of Clinical Chemistry and Laboratory Medicine) in Clinical Pathology Gadjah Mada University. Data analysis in the form of bivariate analysis with compare level of ALT/AST higher than normal values in the first and second month.

Results: In this study there were 31 patients included where there were 3 patients (9.68%) who experienced an increase in AST and ALT consisting of 2 patients (6.45%) who increase in AST and 1 patients (3.23%) have increased both (ALT and AST) higher than normal value.

Conclusions: From the results obtained, it can be concluded that there is an increase in liver function in patients with schizophrenia in Kulon Progo. From 31 patients, 3 patients who experienced an increase in AST and ALT. With wilcoxon test, it was obtained the p value of AST (p=0.268) and ALT (p=0.058). It means no significant differences between AST and ALT because p value >0.05

Keyword: Schizophrenia, antipsychotic, liver function, AST, ALT

INTRODUCTION

Schizophrenia is a chronic heterogeneous syndrome which is characterized by irregular mindset, delusions, hallucinations, and the presence of psychosocial disorders (Crismon *et al.*, 2008). The prevalence of schizophrenia in the world is not evenly distributed and there is an increasing number of cases is very high (Leask, 2004). WHO estimates that worldwide there are about 24 million people affected by schizophrenia. In Indonesia, based on reports of basic medical research in 2007, the prevalence of schizophrenia was reported by 4.6%, while in the province of Yogyakarta prevalence of schizophrenia of 3.8% (Depkes, 2008).

Treatment patterns in schizophrenia patients can be done with pharmacological therapy and non-pharmacological therapy. The drugs are typically used as a pharmacological therapy in schizophrenia patients is antipsychotic drugs. Antipsychotic to the important treatment of schizophrenia, to overcome symptoms, and to prevent recurrence. Treatment of schizophrenia require a long time even a lifetime so will cause unwanted effects, such as adverse affects on liver function.

Drugs are a major cause of impaired hepatic function. Impaired liver function can be resulted from the inhalation, ingestion or parenteral administration of a number of chemical substances. More than 1000 drugs that have been registered as a drug that is responsible for liver, 16% of agents are neuropsychiatric drugs (Dumortier *et al.*, 2002). Tricyclic antidepressant drugs, conventional antipsychotic (classical neuroleptics), and mood stabilizing agents have been reported to cause hepatotoxicity potentially clinically or biologically (Selim and Kaplowitz, 1999). Elevated liver enzymes are reported due to the use of antipsychotic clozapine, perfenazin, haloperidol, and perazin (Gaertner *et al.*, 2001). The aim of the research was to describe the liver function of schizophrenia patients' at Kulon Progo.

METHODS

Subject

Subject in this study was al schizophrenia patients who met the inclusion criteria in private rehabilitation centers in Kulon Progo during the period from June to September 2012. The subjects which include criteria for inclusion were patients' age adults (15-65 years), patients' who treated with a antipsychotic as monotherapy or in combination with an antidepressant and an antiparkinson, and patients' who has been declared stable and cooperative.

Data Collection

The demographic data, such as: age, sex, education, were collected from direct interviews with patients'. Data were collected prospectively by looking at the results of liver function by measuring the levels of AS (SGOT) and ALT (SGPT). Blood examination were done twice within two months. The examination was conducted using UV test according to IFC (International Federation of Clinical Chemistry and Laboratory Medicine) in Clinical Pathology, Gadjah Mad University, Yogyakarta.

Statistical Analysis

This study was observational research with descriptive design. Data analysis in the form of bivariate analysis with compare level of ALT/AST higher than normal values in the first and second month.

RESULT AND DISCUSSION

We recruited 31 patients' included in the inclusion criteria. Patients' data were observed views of the basic characteristics of the patients', the type of treatment used, and the results of laboratory tests of aminotransferase enzymes such as AST and ALT.

A. Characteristics of research subjects

The characteristics data, such as: age, sex, education, were collected from direct

interviews with patients'. Table 1 present the subjects' characteristics.

Table I. Subject's characteristics (n=32)

Characteristics	Number (n)	%
Gender		
Male	19	61.3
Female	12	38.7
Age		
<25	3	9.68
25-45	22	70.97
>45	6	19.35
Marital Status		
Single	25	80.65
Married	6	19.35
Education		
No schooling	1	3.23
Elementary School	6	19.35
Junior High School	6	19.35
High School	13	41.94
Undergraduate	5	16.13

Most of the schizophrenia patients was man of 19 patients' (61.3%). It can be concluded that in the private rehabilitation centers, schizophrenia patients are dominated by men. This result is in contrast to the theory that schizophrenia is the same risk factors between men and women. However, the two sexes showed differences in onset. Males have onset schizophrenia earlier than women (Sadock and Sadock, 2003).

Most schizophrenia patients was in the adult or productive aged range which is between 25-45 years of age range (70.97%). While the largest population is schizophrenia patients ranging in age from less than 25 years in which 3 patients and a population with a range of more than 45 years of age by 6 patients'. This appropriate the theory that schizophrenia is generally emerging adulthood and is rare in adolescence and after the age of 45 years (Goldman, 2000).

Classification of schizophrenia patients by marital status where in some studies found that marital status has a relationship with the risk of schizophrenia. Higher risk of schizophrenia in people who are not married, the comparison with the married is 25:6

patients'. Durand and Barlow (2007) states if schizophrenia patients tend not afford to build or maintain a relationship so that patients' tend to have never married or had children.

Classification of schizophrenia patient by education where based on these data showed the majority of schizophrenia patients have a high school education level is 41.94%. Low education levels can lead to a lack of appreciation in the social environment and cause stressful condition that increase susceptibility to schizophrenia.

B. Characteristics of Schizophrenia Treatment

Based on the use of drugs, there are 3 kind of drugs commonly used by schizophrenia patients which are typical antipsychotics, atypical antipsychotics, and combinations with other drugs. The typical antipsychotics were haloperidol, chlorpromazine, and trifluoperazine. Almost all patients received haloperidol and chlorpromazine therapy. Patients who got trifluoperazine were 8 patients. Table 2 present class and type drugs used treatment patients'

Table II. Classes and types of drugs used in the treatment of schizophrenia patients

Golongan Obat	Jenis Obat	Dosis	n	%
Typical	Haloperidol	2x1,5mg; 2x5mg	25	80.65
Antipsychotic	Chlorpromazine	1x ¹ / ₂ 100mg; 2x ¹ / ₂ 100mg; 2x100mg;	24	77.42
	Trifluoperazine	2x5mg	8	25.81
Atypical Antipsychotics	Risperidone	2x2mg	2	81.25
Antidepressants	Amitriptyline	2x25mg; 2x ¹ / ₂ 25mg	7	22.58
	Clobazam	2x ¹ / ₂ 10mg	1	3.23
Antiparkinson	THP	2x2mg; 3x2mg	30	96.77
Antimania	Lithium	2x ¹ / ₂ 400mg	1	3.23

Antipsychotic is the basic treatment for schizophrenia, to overcome symptoms, and to prevent recurrence. Texas Implementation of Medication Algorithms (TIMA) suggested that the selection of antipsychotic should consider the clinical signs of the patient, health profile, and side effects that will be used (Sandra et al., 2007). In private rehabilitation centers the patients were treated by the combination typical and typical antipsychotics and combination typical and atypical antipsychotics. Patients' with positive symptoms treated with typical antipsychotics. Patients with negative symptoms treated with atypical antipsychotics. If the patients had the positive and negative symptoms, they were treated by the combination typical and atypical antipsychotics (Ikawati, 2011).

Beside the antipsychotic therapy, they also used the additional treatment of antiparkinson and antidepressant. There were 30 of 31 patients (96.77%) with schizophrenia who used the additional drug trihexsilfenidin (THP). THP is a drug used to treat the side effects caused by use of antipsychotics is extrapyramidal side effects. These side effects need to be considered in the selection of appropriate antipsychotic for patients. The antidepressant drug used are amitriptyline. The treatment of antidepressants are used to relieve depression and improve mood. Lithium works by inhibiting the release of serotonin and reduced dopamine receptor sensitivity. Lithium for severe conditions of

anti-mania drug was delivered in combination with antipsychotic drugs.

C. Influence on hepatic function

The descriptive values of variables AST were calculated as Mean±SD and frequencies (count and percentage). The normality of continuous variables such as AST and ALT level were analyzed by Shapiro-Wilk test. The choice of Shapiro-Wilk because the study sample is less than 50 patients' is just 31 patients. If the data show normal distribution, we used parametric test and if did not show normal distribution, we used non parametric test were Wilcoxon test. The wilcoxon test were used to examine the significance of change from the first month to second month for level AST and ALT level.

From the level of AST, we obtained there mean±SD is 20.35±7.392. Among 19.35% patients experienced an increase in level AST. According to the normal value, there are only 9.68% patients experienced an increase AST exceeds the normal value. The normal value of AST in woman is <31 U/L and man is <35 U/L. According to the Wilcoxon test the value of significancy is 0.268 (P> 0.05) thus it can be concluded that there was no significant difference AST and ALT first month of the second month.

From the level of ALT, we obtained there mean±SD is 15.97±7.264. Among 25.81% patients experienced an increase in level of ALT. According to the normal value, there are

only 3.23% patients experienced an increase AST exceeds the normal value. The normal value of ALT in women is <31 U/L and man is <41 U/L. According to the Wilcoxon test,

the value of significancy is 0.058 ($P > 0.05$), thus it can be concluded that there is no difference in the value of ALT first month of the second month.

Table III. Mean change between first month and second month mean levels of AST and ALT

Enzymes	First month (n=31)	Second month (n=31)	p value
AST	20.35 (7.39)	27.71 (7.1)	0.268
ALT	15.97 (7.264)	18.42 (7.89)	0.058

ALT= alanine aminotransferase; AST=Aspartate aminotransferase

Result were represented as Mean (\pm SD)

$P < 0.05$ was considered statically significan.

It can be concluded that there is an increase in liver function in patients with schizophrenia in Kulon Progo. From 31 patients, 3 patients (9.68%) who experienced an increase in AST and ALT. With wilcoxon test, obtained p value were AST ($p=0.268$) and ALT ($p=0.058$).

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