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THE SIDE EFFECTS EXTRAPYRAMIDAL DIFFERENCES IN HALOPERIDOL TREATMENT BETWEEN HEAVY AND LIGHT MOKERS TO SCHIZOPHRENIA MALE PATIENTS YEAR 2015

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ABSTRACT

Background: *The high prevalence patients with schizophrenia for male smokers than general population according to lower extrapyramidal side effects by use antiphsychotic.*
Research aim*: To know the side affects extrapyramidal differences in Haloperidol treatment between heavy and light smoker to schizophrenia male patients.*
Research method: *The kind of research is analytic chategorial unpairs nonprobability sampling, the kinds consecutive sampling with cross-sectional approach. The research placed in Instalation of Mental Health Psychiatryc Prof. dr. Ildrem North Sumatera Province since July 2015 to September 2015. Subject of research totally all male patients schizophrenia with inclusion criteria. Subject totally 80 persons; 40 persons male schizophrenia patients heavy smokers and 40 persons male schizophrenia patients light smokers. The measurement apparatus is Simpson–Angus Extrapyramidal Side Effect Scale. Data analysis by using t-Independent test.*
Result*: Totally as much as 80 persons patients devide as heavy smokers and light smokers whereas the most heavy smokers age between 35 - 44 years totally 23 person as much as 28,7%, light smokers persons totally 40 persons as much as 50% and heavy smokers totally 40 persons as much as 50%, those unmarriage totally 43 persons totally 53,7%, jobless totally 42 persons as much as 52,5% and level education Senior High School 23 person totally 28,7%. From result Chi-Square there's differences side effect of extrapiramidal between light smokers and heavy smokers between score SAS totally 0,001 (p<0,05).*
Conclusion: *There is significant differences extrapiramidal between light smokers and heavy smokers against SAS score totally 0,001 (p<0,05).*
Keywords: *Schizoprenia, ekstrapiramidal, smokers, Simpson-Angus Extrapyramidal Side Effect Scale*

1. INTRODUCTION

Background

Smoking is the main problem of health in general population. Smoking is the main problem causing cardiovascular desease. Smokers acting as synergy to increase miokard infark risk,heart mortality , stroke, vena perifer and aorta aneurisma. Current possibility of smoking in the general population is almost comparable between men and women (18% versus 16%). The prevalence of smoking for schizophrenic patients is higher than in the general population. More than 60% of schizophrenic patients were current smokers, while 35.5% smoked 20 cigarettes or more per day. Heavy smokers contributed much to be death in patients with skizofrenia. Williams and Ziedonis study in 2004 found that schizophrenic patients have higher smoking rates compared with other psychiatric patients and the general population. De Leon and Diaz in 2005 conducted a meta-analysis of 42 studies in 20 countries consistently show the relationship between schizophrenia and smoking. The study links between marriage, socioeconomic status, alcohol, use of drugs and the use of antipsychotics, indicating that the high rate of smoking in schizophrenic patients depending on the line and across cultures and countries. Study Williams and his colleagues in 2010 that smokers with schizophrenia greater nicotine dependence than smokers without schizophrenia, for example, consume more cigarettes, consume more nicotine per cigarette and nicotine levels in the blood were higher in schizophrenia are smokers. Schizophrenic patients have a lower success rate in an attempt to stop smoking and motivation to quit smoking in schizophrenic patients was significantly lower than in controls. But it is unclear why smoking is so widespread behavior in patients with schizophrenia. Reasons for this include that nicotine may help alleviate the negative symptoms,

reduce the side effects of antipsychotic medication and improve cognitive decline, suggesting that smoking or nicotine serves as a form of self treatment.

Current smokers are defined as those who smoked more than one cigarette every day and had been smoking for more than 1 year. Former smokers are defined as people who have a previous history of smoking more than one cigarette per day but started to quit smoking for more than one year. High marks for the percentage of smokers who smoke in large numbers indicates a high severity in a population. Smokers like this is called a heavy smoker. However, the concept of heavy smokers has been defined in different ways, with no consensus, including> 1 pack per day,> 15 cigarettes per day, and> 30 cigarettes per day. For the purposes of this study, a heavy smoker was defined smoked at least one pack of cigarettes per day, thus making the comparison with a newly-published study. However, it is not specified how long it takes for the smokers who smoked at least one pack of cigarettes per day is considered as a heavy smoker in the hospital.

In short find some clinical or demographic differences between patients with heavy smokers and heavy smokers are not in the case of schizophrenia. They showed that people with schizophrenia are heavy smokers were younger, smoking at an earlier age, more often suffer the paranoid subtype, but much less than subtypes of schizophrenia are not detailed, and has a good dose of antipsychotic drugs were higher compared with heavy smokers. Treatment with atypical antipsychotics clozapine and all together was associated significantly with the severity of smoke. In addition, heavy smokers displayed significantly fewer negative symptoms and side effects ekstrapiramidalnya. In addition, heavy smokers showed prolonged QTc interval, showing additional health risk for cardiovascular disease. Further research is needed to clarify the underlying mechanisms of the clinical observations and demographic differences between heavy smokers and light smokers at skizofrenia.
A study Sagud and his colleagues argued that smoking is an attempt to self-medicate in schizophrenic patients in terms of reducing extrapyramidal symptoms associated with antipsychotic drug use, and reduce the cognitive deficits associated with schizophrenia. Smoke induce the metabolism of many drugs, including antipsychotic drug, because of the increased enzyme CYP 1A2 and CYP 3A4. Smoking also significantly increases the activity of CYP2E1, and CYP1A2 and CYP2E1 both involved in the activation of several procarcinogens. In general, people with schizophrenia smoke, nicotine pharmacokinetic interaction of antipsychotic drugs is common. The concentration of olanzapine and clozapine decreased in smokers compared with non perokok.

Psychiatric disorders generally have a high prevalence of nicotine dependence. Deaths due to tobacco use is higher than deaths due to suicide, homicide and accidents. According to the WHO, 20% of smoking is the leading cause of preventable death in developed countries. A study by Leon et al 1995, smoking in schizophrenic patients males reported having the highest rate. The prevalence and severity of smoke determine the severity of psychosis that affects patients with schizophrenia and also in patients with other psychotic bipolar patients with symptoms such as psikotik. Research conducted by Tarin and Loebis 2003 the prevalence of schizophrenic patients who smoke in the polyclinic psychiatric Hospital Dr. Pirngadi Medan was 64.4% and was found more patients schizophrenic man who merokok.

Heavy smokers smoke a large number of cigarettes per day. According to Leon and Diaz in 2005, a heavy smoker is smoking a large number of cigarettes per day ≥ 30 cigarettes per day according to a report sendiri.2 While in Indonesia said light smokers in men spent cigarettes amounted to 1-10 cigarettes per day, heavy smokers>20 stems each day. According to Williams and Ziedonis 2004 schizophrenic patients who smoke are more likely to become heavy smokers (45% -70%) than smokers who are in the general population (30% - 40%) and have a high level of dependence on nikotin. Based on the foregoing and the high prevalence of smoking in schizophrenic patients, the researchers are interested to see the difference in extrapyramidal side effects in the treatment of schizophrenic patients haloperidol among male smokers of light and heavy at the Mental Hospital Prof. dr. M. Ildrem North Sumatra Province.

Formulation of the problem. Is there a difference in the treatment of extrapyramidal side effects of haloperidol between male schizophrenic patients light and heavy smokers?

General purpose:To determine differences in extrapyramidal side effects in the treatment of schizophrenic patients haloperidol among male smokers of light smokers and heavy.

Specific purpose: 1. To determine the demographic characteristics of the study subjects.
2. To determine differences in the total score of the Simpson-Angus Extrapyramidal Side Effect Scale

(SAS) in the treatment of schizophrenic patients haloperidol male light smokers.
3. To determine differences in the total score of the Simpson-Angus Extrapyramidal Side Effect Scale (SAS) in the treatment of schizophrenic patients haloperidol male heavy smokers.

2. LITERATURE

1. Schizophrenia

Schizophrenia is a psychotic disorder with unknown cause characterized by thought disorder, mood, and behavior. Disturbance of mind shown by irregularities in assessing the reality, sometimes accompanied by delusions and hallucinations, accompanied by a collection of separate thoughts that cause interference in speech. Behavioral disorder characterized by withdrawal or strange activity. It's all been characterized as positive and negative symptoms. Although it is not a cognitive disorder, schizophrenia often cause cognitive impairment (eg, concrete thinking, disruption in information processing).

Epidemiology

a.Incidence and prevalence

In the United States the incidence of prevalence of the disease is about 1%, which means there is one among the 100 people who will develop into disease during the time kehidupannyadan approximately 0.05% of the total population who were treated with schizophrenia but only half of it in one year to get therapy overall. Found throughout society and throughout the geographic region. In the world there are about two million new cases appearing yearly.

b.Gender and age

Prevalence is equal between men and women are usually in men with early onset peak age of onset of 15 and 25 years old and female onset is 25 years to 35 years. Onset of schizophrenia before the age of 10 years or after 50 years is very rare.

c.Infection and season of birth

A strong findings in schizophrenia research that people born in winter found more developing into a disease when compared with people born in the summer. A mother who experienced influenza during pregnancy, the incidence of schizophrenia more were found.

d. Race and religion

Jews affected slightly when compared with Protestants and Catholics. Prevalence is also higher in the black population.

e. Medical illness and mental illness

Some studies show about 80% of all patients with schizophrenia have significant coexisting medical illnesses and almost 50% are undiagnosed. The cause of death of people with schizophrenia because of the suicide of approximately 10%, and more than 40% because of drug and alcohol dependence.

f.socioeconomic

More often encountered in low socio-economic status of the high socio-economic status.

Clinical symptoms

Although not yet known formally as part of the diagnostic criteria for schizophrenia, some research create a sub category of the symptoms of this disease into five parts, namely: positive symptoms, negative symptoms, cognitive symptoms, symptoms of aggressive and depressive symptoms / cemas.

1. Positive symptoms

Delusions, hallucinations, distortions and exaggerated statements in language and communication, speech / irregular behavior, catatonic behavior, and agitation.

2. Negative symptoms

Afek blunt, emotional withdrawal, poor rapport, indifference, withdrawal from social life, annoyance abstract thinking, alogia, avolisi, anhedonia, attention deficit disorders.

3. Cognitive symptoms

Impaired thinking, inkoherensia, loose association, neologisms, information processing disorder.

4. Symptoms aggressive

Hostility, verbal humiliation, physical abuse, attack, injure themselves, damage the goods, impulsive, sexual acts.

5. Symptoms of depression / anxiety Depressed mood, mood anxiety, guilt, tension, irritability anxiety.

Diagnosis

The diagnostic criteria for schizophrenia based PPDGJI-III are as follows:

Schizophrenia disorder based PPDGJI-III is generally characterized by distorted thinking and perception are fundamental and distinctive, and therefore affect the unnatural (Inappropriate) or blunt (blunted). A clear consciousness and intellectual ability is maintained, although certain cognitive deficits may develop later. Although there are no pathognomonic symptoms specific, in practice there are benefits to divide these symptoms into groups that are often found together, for example:
(A) "thought echo", "thought insertion" or "withdrawal" and "thought broadcasting"
(B) controlled Supposition (delusion of control), delusions were affected (delusion of influence) or "passivity", which clearly refers to the movement of the body or limb movement, or thoughts, actions or feelings (sensations), specifically; delusional perception;
(C) The sound hallucinations constantly commenting on the behavior of the patient, or the patient discuss the matter among themselves, or other types of hallucinatory voices coming from one part of the body;
(D) Supposition-delusion settling other types according to their culture is considered unnatural and altogether impossible, such as the religious identity or politics, or the power and capabilities of the "Superman" (eg being able to control the weather, or communicate with aliens from another world);
(E) The hallucinations that persist in any modality, when accompanied either by delusions floating / floating or half form without content affective clear, or by the ideas of excessive (over-valued ideas) that persist, or if it happens every day during weeks or months continuously;
(F) The current thought is interrupted or experiencing inserts (interpolation) that result in incoherence or irrelevant speech, or neologisms;
(G) Conduct catatonic, such as noise-agitated state (excitement), a certain body posture (posturing), or serea flexibility, negativism, mutism, and stupor;
(H) The symptoms of "negative" as the attitude is very time bodo (apathy), the stalled talks, and emotional responses become blunt or unnatural, usually resulting in withdrawal from social interaction and decreased social performance, but it should be clear that all things is not caused by depression or medication neuroleptika;

(I) A consistent and meaningful change in the overall quality of some aspects of individual behavior, manifest as loss of interest, aimless, lazy attitude, reticence (self-absorbed attitude) and withdrawal are sosial.
Diagnostic guidelines.

The normal requirements for diagnostic of schizophrenia is that there should be at least one of these symptoms above are very clear (and usually two symptoms or if the symptoms are less sharp or vague) symptoms that included one group of symptoms (a) to (d) above, or at least two symptoms of a group (e) to (h) should always be clearly during the period of one month or more.

2. Smoke

The use of tobacco in the world began at least 600 years after AD and was introduced into the culture of Europe in the 16th century. Initially, most of the use of tobacco through pipes, smokeless tobacco, or cigars. Smoking became popular starting in the early 1900s with the invention of the cigarette maker. Tobacco use is growing dramatically in the first half of the century, 20.8 Tobacco is one of those plants that contain nicotine is addictive, some carcinogens and other toxins. Nicotine is the substance in tobacco that causes addiction. Tobacco products in its extensive use and commercial production is divided into three types of tobacco processing:

1. Tobacco rolled smoky (such as bidis, cigars, cigarettes)

2. Pipe (including waterpipe)
3. Oral Treatment for mastication and placed in the mouth (such as snuff, snus, betel liquid)

Raw material abroad as tobacco cigarette smoking are referred to as white, while in Indonesia, the raw materials are tobacco and clove cigarettes called non kretek.
4. classification Smoking
Male smokers consist of:
a. light smokers (1-10 cigarettes per day)
b. moderate smokers (11-20 cigarettes per day)
c. heavy smokers (> 20 cigarettes per day).

3. Smoking Behavior in schizophrenia

The biological effect of smoking on schizophrenia.

It has been argued that smoking in schizophrenic patients is to try to self-medicate, in terms of reducing extrapyramidal symptoms associated with antipsychotic treatment, and reduce the cognitive deficits associated with schizophrenia. Smoke induce the metabolism of many drugs, including antipsychotics, because of increased enzyme CYP 1A2 and CYP 3A4. Smoking also significantly increases the activity of CYP2E1, CYP 1A2 and CYP 2E1 is involved in the activation of several large procarcinogen.Sebagian schizophrenic patients who smoke cigarettes, generally occurs between nicotinic pharmacokinetic interactions with antipsychotic drugs. Therefore, vulnerability (vulnerability) to schizophrenia may be associated with susceptibility commencement of smoke. Cigarette smoke seems to induce clinical and biological effects in schizophrenic patients. Schizophrenic patients who smoke have more gray matter in the superior temporal gyrus and the lateral prefrontal cortex, compared with patients who did not smoke. Smokers in schizophrenic patients reported to decrease the density of platelet vesicular monoamine transporter 2 (VMAT2) compared with schizophrenic patients were not smokers. While in schizophrenic patients generally increases the density of platelet VMAT, it is hypothesized that smoking induces downregulation VMAT2, which compensates for increasing the concentration of dopamine induced by merokok. There is also some scientific evidence to report the hypothesis that the possibility of genetic differences among schizophrenic patients who smoke and who do not smoking. Evidence for the role of the alpha 7 nicotinic acetylcholine receptors in the auditory gating was originally established by using several animal models. auditory-evoked response of the hippocampal CA3 pyramidal neurons in rats, the potential field of P20-N40, in parallel with the properties of P50 auditory-evoked response of man. alpha 7 nicotinic receptor antagonist -bungarotoxin disrupt gating P20-N40, while nicotinic receptor channel blocker and a muscarinic antagonist scopolamine mecamylamine has no effect on P20-N40 gating. DBA / 2 mouse strain is genetically lower levels of alpha 7 nicotinic receptors in the CA3 region and disrupt auditory gating. Finally, nicotine restore auditory gating in fimbria-fornix lesions of mice with impaired auditory gating for the loss of cholinergic innervation to the hippocampus. Alpha 7 nicotinic receptors mediate this inhibition to increase the release of gamma-aminobutyric acid (GABA) from GABAergic interneurons through postsynaptic calcium dependent mechanisms. The effects of nitric oxide extend through the second messenger system. This is accomplished by glutamate. This effect is thought to prevent hippocampal neurons from responding to the interaction between inhibitory and excitatory (glutamate) neurons that also play a role in shaping patterns of efficiency and function of neurons in the hippocampus and cortex. A series of parallel studies in humans are also involved in the alpha 7 nicotinic acetylcholine receptor in the physiology of auditory P50 gating. Nicotine gum and physostigmine was found to increase the gating in patients schizophrenik families who also have impaired auditory gating. The study of the kin group is very useful because it can avoid messing up additional pathological effects of schizophrenia, chronic neuroleptic treatment effects as well as effects of chronic smoking on nicotinic receptor levels.

Tobacco nicotine dependence in schizophrenia. In a population-based prevalence studies concluded that individuals with mental illness have the tendency to smoke 2-3 times more besardari other individual. In research on clinical practice and epidemiology of mental health in a brief report on patients with mental disorders who are hospitalized at a care unit, psychiatric assess its relationship to changes in smoking habits, found an increase in smoking habits of 56% before being admitted to 70% after treatment inpatient and there are 17% who experienced a decrease in smoking habits and about 63% smoked more than before. The average number of smoking tobacco in a day increased by 5 to 13 times more. The main reason for smoking is boredom, stress and a desire to be able socialization.

The high rate of smoking among schizophrenic patients reflects the effect that smoking has become a habit, and the inability to control impulses. In the past, cigarettes have been used in hospitals as a kind of gift. Patients usually hypohedonic psychiatric disorders that are less responsive to the factors driving and smoking is one of the few factors driving the best for the patient. Although management has changed and the trend lately led to the smoke-free hospital, but high levels of unemployment, decline in social activity and boredom in general contributed to the patient's smoking habit schizophrenic.

4. Antipsychotic drugs.

Different pharmacological treatment according to the patient's illness phase. The acute phase is usually characterized by psychotic symptoms require immediate clinical attention. It

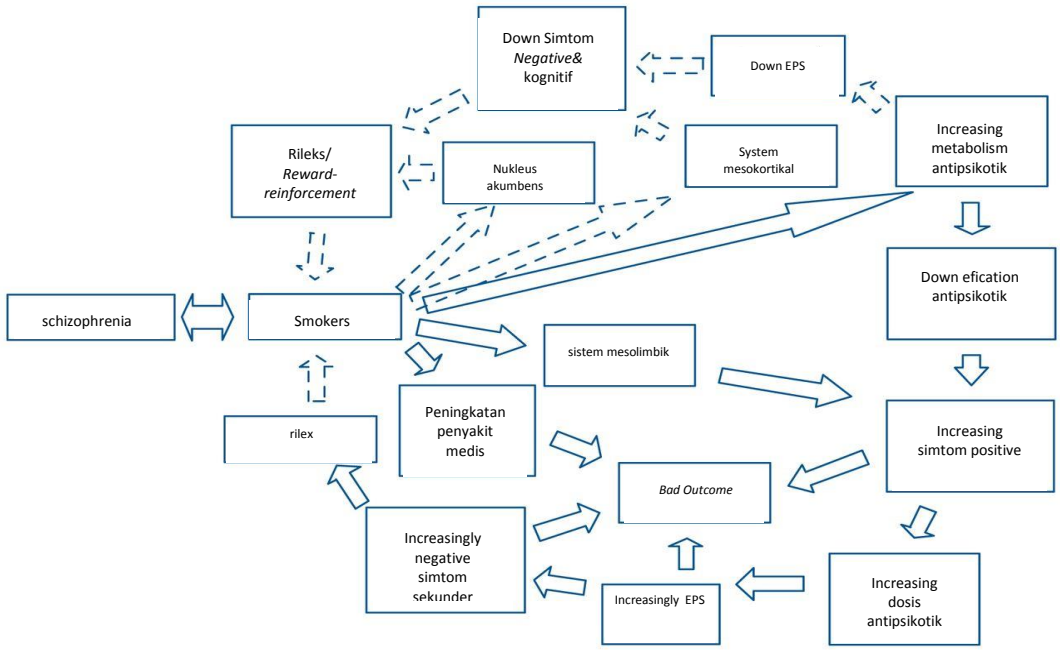
may appear at first psychotic episode or a relapse is more common in individuals who have experienced multiple episodes usually last 4 to 8 weeks. The main goal of treatment in this phase is to reduce the severity of psychotic symptoms. Next is the stabilization phase, in which the acute symptoms have been controlled, but patients at risk of relapse when treatment is stopped or if the patient is exposed to stress, lasts for 6 months, follow the healing of acute phase. The main goal of treatment in this phase is to incorporate the additional effect of treatment with treatment similar to that used acute phase. The third phase is the stable phase or a maintenance phase when the disease is in remission or symptom is relatively stable. The goal of treatment during this phase is to prevent relapse or exacerbation and to help patients improve their function.

Almost every patient with schizophrenia will have improvement of pharmacological treatment. Antipsychotic treatment is a major pharmacological treatment, is effective in reducing the influence of psychotic such as hallucinations, delusions (delusion) and suspicion (suspiciousness). In many patients these symptoms can be completely resolved. One of these symptoms can be reduced, treatment can reduce the risk of relapse in patients with stable disease tends occurs. Medicines to treat schizophrenia are divided into two main groups typical antipsychotics and atypical antipsychotics. More typical antipsychotic reducing positive symptoms (hallucinations and delusions) rather than negative symptoms (such as withdrawal and affective reduction), whereas atypical antipsychotics reduce positive and negative symptoms. Treatment with antipsychotic associated with reduced levels of side effects among which the most famous is Extrapyramidal Syndromes (EPS), such as acute dystonia, parkinsonism, akathisia and tardive dyskinesia is the most common side effects of treatment antipsikotik.

5. Simpson-Angus Extrapyramidal Side Effect Scale (SAS)

Patients who have criteria for extrapyramidal side effects using the Simpson-Angus Extrapyramidal Side Effect Scale (SAS). SAS is a grading scale that has 10 item rating scale widely used to assess extrapyramidal side effects induced by neuroleptics, which are designed for use in clinical practice and research. Consisting of one item assessing gait (hypokinesia), 6 items assessing rigidity and three items assessing glabella tap, tremor and salivation. Each case assessed on a 5-point scale (0-4) and the average value obtained by adding the items and divided by 10. A value of 0 means normal, 1 means mild severity, 2 means moderate severity, mean severity ≥ 3 weight. SAS is an instrument that is reliable and valid.

6. Framework Theory



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3. RESEARCH METHOD

1. Research design

Research design analytic chategorial unpairs *nonprobability sampling*, the kinds *consecutive sampling* with *cross-sectional* approach , such as:

Group I : Group male patients shizoprenia with light smokers.

Group II : Group male patients shizoprenia with heavy smokers.

2. Reseach placed

1. Placed : in medical room of psychiatric Prof. M. Ildrem North Sumatera University.
2. Period : September year 2015

3. Research Population

1. Target population : Male patients shizophrenia light smokers and heavy smokers with haloperidol treatment.
2. Population randomly : Male Patients shizoprenia with light smokers and heavy smokers in Room Instalation Health Psychiatric Hospital Prof. M. Ildrem North Sumatera University in September 2015.

4. Sampling and sampling method

1. Research sampling : Male shizophrenia patients with inclusi criteria.
2. Sampling method by using *non probability sampling* with kinds *consecutive sampling*.

5. Measuring the Quantity of sample. The quantity of sample can be measure by calculation:[18]

$$n1 = n2 = \frac{(Z\alpha\sqrt{2PQ} + Z\beta\sqrt{P1Q1+P2Q2})^2}{(P1-P2)^2}$$

Note:

- n = Quantity of total sample
- n1 = quantity of sample from group 1
- n2 = quantity of sample from group 2
- Zα = basic deviat alfa= 1,96 (α=5%)
- Zβ = basic deviat beta = 0,84 (β=20%)
- $x_1 - x_2$ = the range of average.

$$n1 = n2 = \frac{(Z\alpha\sqrt{2PQ} + Z\beta\sqrt{P1Q1+P2Q2})^2}{(P1-P2)^2}$$

$$n1 = n2 = \frac{(1.96\sqrt{2.(0.65)(0.35)} + 0.84\sqrt{(0.8)(0.2)+(0.5)(0.5)})^2}{(0.8-0.5)^2}$$

n1=n2 = 38.33 = 40.

By using those equation gaining minimal sample for each group as much as : 40 persons into group 1 and totally 40 persons into group 2. Total sampling for this research totally 80 persons.

6. Inclusi criteria and exclusi

•Inclusi criteria:

1. Patients who meet the diagnosis of schizophrenic PPDGJ-III
2. Smokers

3. Gender male

4. Age 15-55 years

5. The acute phase of treatment 1-6 weeks haloperidol dose of 10 mg / day.

6. Understand Indonesian

7. Willing as respondents and interviewed

• Exclusion criteria:

1. Suffering from severe medical illness

2. History of the use of alcohol and other substances than tobacco in cigarette form.
3. Obtain anti-cholinergic> 1 month.

7 How it works

• Identify the subject, namely: male schizophrenic patients who come to the Installation Outpatient Mental Hospital Prof. M. Ildrem North Sumatra Province were interviewed to obtain research subjects in accordance with the inclusion criteria.

• The allocation of subjects namely the light smokers and heavy smokers.
• Then extrapyramidal side effects assessed using a questionnaire Simpson-Angus Scale extrapyramidal Side Effect.

• Statistical analysis was then performed to determine whether the differences found in the extrapyramidal side effects of haloperidol treatment between male schizophrenic patients light and heavy smokers.

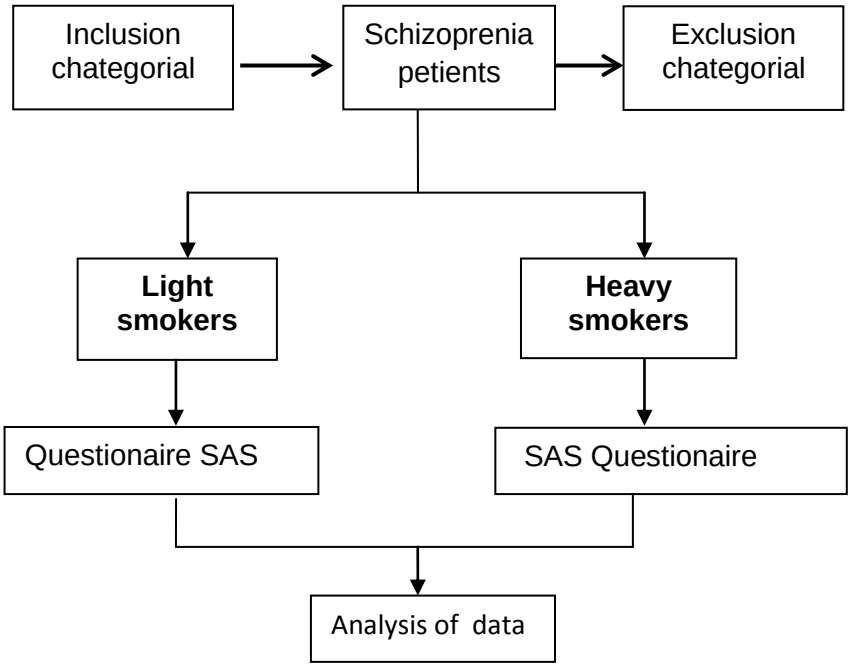
8. Identification of variables

The research variables are:

1. The independent variable (independent variable). In this study is the schizophrenic patients were smokers.

2. The dependent variable (dependent variable). In this study, the dependent variable is the extrapyramidal side effects.

9. Framework concept



10. Permission Research Subjects

All the study subjects will be asked to consent in advance briefed prior to be included as a research subject.

11. Research Ethics

This study has received approval from the Research Ethics Committee at the Faculty of Medicine, University of North Sumatra, Medan.

12. Data processing

Once the data is collected, performed data processing with the stages as follows: (i) Editing, is a step to examine the completeness of data (2) Coding, is an attempt to classify the answers according to type, (3) Tabulation activities to supply data research in the table (4) Analysis of data, research data were analyzed using statistical test Chi-Square facility is SPSS for windows (if eligible) and previous normality test data.19

13. Analysis and Presentation of Data

Once the data is collected, the data processing performed by stages as follows: (1) Editing, is a step to examine the completeness of the data obtained through interviews; (2) Coding, is an attempt to classify the answer is no according to its kind; (3) Tabulation, is an activity of the research data into a table based on the variables studied; (4) Analysis of data, research data were analyzed using a statistical test that unpaired t test.

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4. RESEARCH RESULT

Patients Totally 80 male schizophrenia outpatients Prof.M.Ildrem Mental Hospital in North Sumatra province, were included in this study. Election sample by *consecutive sampling* periods in September 2015.

Table 4.1. Sampel distribution according to demography characteristic clinic.

Characteristic Sample	Quantity (n = 80)		%
Age(year)	15 - 24	19	23,7
	25 - 34	21	26,3
	35 - 44	23	28,7
	45 - 55	17	21,3
Smokers	light	40	50
	Heavy	40	50
Marriage status	Marriage	37	46,3
	Not Marriage	43	53,7
Occupation	Working	38	47,5
	Not working	42	52,5
Education	Elementary school	19	23,7
	Junior High school	21	26,3
	Senior high school	23	28,7
	College	17	21,3

Table 4.1 shows that the age group that most are in the age group 35-44 years as many as 23 people, namely 28.7%, light smokers as many as 40 people are 50% and as much as 40 heavy smokers is 50%, which does not marry as many as 43 people ie 53.7%, which was not working as many as 42 people, namely 52.5%, and the level of high school education as many as 23 people, namely 28.7%. In this study found the average age of schizophrenic patients light smokers: 35.4 ± 9.2, the mean age of patients with schizophrenic smokers: 34.7 ± 8.8, the mean weight light smokers schizophrenic patients: 64.5 ± 7.3, the average weight of schizophrenic patients are heavy smokers: 66.2 ± 7.1, the mean dose of haloperidol in two groups: 10 (0.00). The mean score of the PANSS total light smokers schizophrenic patients: 83.3 ± 12.1, mean total PANSS score skiizofrenik patients are heavy smokers: 74.2 ± 6.4

Table 4.2. ESRS differences between light smokers and heavy smokers were assessed by SAS

	Smokers		Total	P
	Light		Heavy	
	n (%)		n (%)	
Skor SAS				
Normal	2 (8,7)	**24 (92,3)**	26 (100,0)	**0,001**

Light	1 (7,2)	13 (92,8)	14 (100,0)
Medium	**22 (91,7)**	2 (8,3)	24 (100,0)
Heavy	15 (93,8)	1 (6,2)	16 (100,0)
Total	40 (50,0)	40 (50,0)	80 (100,0)

Table 4.2 shows the results of Chi-square significantly different extrapyramidal side effects between light smokers and heavy smokers to score SAS amounting to 0.001 ($p < 0.05$).

Discussion

The study "The difference in extrapyramidal side effects in the treatment of schizophrenic patients haloperidol among male smokers of light and heavy" is an analytic study with cross sectional approach. The general objective of the present study was to determine differences in extrapyramidal side effects in the treatment of schizophrenic patients haloperidol among men of light and heavy smokers who come to the Installation Outpatient Mental Hospital Prof.M.Ildrem North Sumatra Province. The specific objective of this study to determine differences in the total score of the Simpson-Angus Extrapyramidal Side Effect Scale (SAS) between light and heavy smokers in patients with schizophrenic man who came to the Installation Outpatient Mental Hospital Prof.M.Ildrem North Sumatra Province.

Based on the demographic characteristics of the study sample, it was found most is the age group 35-44 years as many as 23 people, namely 28.7%, light smokers as many as 40 people are 50% and as much as 40 heavy smokers is 50%, which does not marry as many as 43 people ie 53.7%, which was not working as many as 42 people, namely 52.5%, and the level of high school education as many as 23 people, namely 28.7%.

In this study show that extrapyramidal side effects often found in patients with schizophrenic light smokers were 22 people (91.7%). These results are also in accordance with the study undertaken Williams and his colleagues in 2010, which suggests that smoking is an attempt to self-medicate in schizophrenic patients in terms of reducing extrapyramidal symptoms associated with the use of antipsychotic drugs, and reduce the cognitive deficits associated with schizophrenia , Smoke induce the metabolism of many drugs, including antipsychotic drug, because of the increased enzyme CYP 1A2 and CYP 3A4. Smoking also significantly increases the activity of CYP2E1, and CYP1A2 and CYP2E1 both involved in the activation of several procarcinogens. In general, people with schizophrenia smoke, nicotine pharmacokinetic interaction of antipsychotic drugs is common. The concentration of olanzapine and clozapine decreased in smokers compared with non smokers.

Limitations of this study are in patients taking haloperidol is better to use a lower antipsychotic side effects ekstrapiramidalnya.

5. CONCLUSION

Eighty of research subjects who participated in the study are male schizophrenic patients who come to the Installation Outpatient Mental Hospital Prof.M.Ildrem North Sumatra Province in September 2015 period, the following was concluded:

1. From the results based on the scores of SAS that schizophrenic patients with mild smokers most often found extrapyramidal side effects with the score2:moderate.
2. There are significant differences in extrapyramidal side effects between light smokers and heavy smokers to score SAS amounting to 0.001 ($p < 0.05$).

Suggestion

With the discovery of extrapyramidal side effects in patients with mild and severe schizophrenic smokers should clinicians can continue to pay attention to the administration of drugs and side effects caused by antipsychotic drugs and can improve the quality of life of this schizophrenic patients. For subsequent authors of the study are expected to become a reference or the like to examine other factors associated with extrapyramidal side effects in schizophrenic patients using antipsychotic haloperidol or other antipsychotics.

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