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PARKINSONISM ON SKIZOPHRENIC PATIENTS PROVIDED HALOPERIDOL TREATMENT 10 MG PER DAY IN MENTAL HOSPITAL'S INPATIENT

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ABSTRACT

Background: *Schizophrenia is a varied clinical syndrome, but highly confusing, involving the psychopathology of cognition, emotion, perception, and other aspects of behavior. Treatment of schizophrenia is very important to reduce symptoms and improve health that related to quality of life. Treatment with antipsychotics is associated with side effects, among which the most notable are Extrapyramidal Syndromes (EPS), such as acute dystonia, parkinsonism, akatisia and tardive dyskinesia. The prevalence of Parkinsonism varies considerably among studies, ranging from 15 percent to more than 50 percent of patients treated with antipsychotics. Parkinsonism is considered an acute side effect, associated with first-generation antipsychotics, in 50 percent of Parkinsonism cases appearing in the first month of treatment, and 90 percent after 72 days of treatment. Other studies see that in most patients developing Parkinsonism within 20 days, while others report Parkinsonism occurring within the first week of treatment.*

The aim of this study: *To determine the mean SAS score at the time of Parkinsonism occurrence in schizophrenic patients using haloperidol treatment and to determine the onset of parkinsonism after haloperidol treatment.*

Method: *This study is an unpaired numerical analytical study with cross sectional study approach to see the effects of Parkinsonism after the use of haloperidol in schizophrenic patients based on Simpson Angus Scale (SAS) score. This study was conducted in January until February 2013, to inpatient of Mental Hospital Prof. Dr. M. Ildrem province of North Sumatra Medan Indonesia.*

Results: *According to demographic characteristics, mean age of the study subjects was 31.83 with a standard deviation of 7.702. The emergence of Parkinsonism is the fastest one week and at the maximum 3 weeks. The final SAS score, in the study subjects was not found score of 0 (normal) and score> 3 (very heavy), score 0,1-1 (mild) was found in 2 people (5,70%), score 1,1-2 Was found in 23 people (65.70%), and a score of 2.1-3 (heavy) was found in 10 people (28.60%), mean 1.69 and standard deviation 0.49.*

While the age of occurrence of Parkinsonism was the most 40-50 years that appeared in week I (14.3%) and at the age of 20 - 29 years appeared in week III (37.1%), with p = 0.001 (p <0.005) .

At the age of 20-29 most SAS scores were 14 (40%) and at the age of 30-39 years the most scores were 10 (28.57%) p = 0.001 (p <0.005).

Conclusions: *From this study, there was a significant difference in the incidence of Parkinsonism based on age and onset assessed by using SAS. Where an increase in the onset of Parkinsonism increases with age.*

Keywords: *Parkinsonism, Extrapyramidal Syndromes (EPS)*

1. INTRODUCTION

Schizophrenia is a varied, but highly confusing, clinical syndrome involving the psychopathology of cognition, emotion, perception, and other aspects of behavior. Signs of the disease vary depending on the patient and time, but the effect of the disease is always severe and usually long. Patients with schizophrenia were noted to suffer some problems with work, school, interpersonal relations and self-care[1,2]

Schizophrenia affects approximately 1 percent of the population, usually beginning before the age of 25, lasting a lifetime, and of people from all walks of life. The prevalence of schizophrenia is prevalent in both women and men. But both sexes are different in terms of early onset and the course of the disease. Onset is faster in men than women. The peak age of schizophrenia in men 25 years, and in women 35 years. About 90 percent of treated schizophrenic patients are between 15 and 55 years of age. Onset at age less than 10 years and at age more than 60 years is very rare.[1,3]

Treatment of schizophrenia is very important to reduce symptoms and improve health-related quality of life. Drugs for treating schizophrenia are divided into two main groups, typical antipsychotics and atypical antipsychotics. Typical antipsychotics further reduce positive symptoms (such as hallucinations and vision) rather than negative symptoms (such as withdrawal and affective reduction), whereas atypical antipsychotics reduce both positive and negative symptoms. Treatment with antipsychotics associated with reduced rates of side effects, among the most notable are Extrapyramidal Syndromes (EPS), such as acute dystonia, parkinsonism, akathisia and tardive dyskinesia, are the most common side effects of antipsychotic treatment. First-generation antipsychotics represent the first group of drugs for schizophrenia and other psychotic disorders. All antipsychotics are clinically associated with EPS at the effective dose.[2,4,5]

EPS, one of which parkinsonism is a major problem in the treatment of schizophrenia in relation to its negative effects on treatment compliance, patient distress, social stigma, and reduced quality of life. Clinically, Parkinsonism is characterized by bradykinesia, rigidity tremor and bending stance. Other manifestations are gait disturbance, salivation and seborrheic dermatitis. Parkinsonism is thought to be caused by a blockade of dopamine receptors on the nigrostriatal pathway, although additional hypotheses have been suggested. It has been shown that early EPS including parkinsonism is a predictor of tardive dyskinesia. The prevalence of Parkinsonism varies considerably among studies, ranging from 15 percent to more than 50 percent of patients treated with antipsychotics.[6]

Parkinsonism is considered an acute side effect. According to data from the 1960s associated with first-generation antipsychotics, in 50 percent of Parkinsonism cases appear in the first month of treatment, and 90 percent after 72 days of treatment. Another study saw that in most patients developing Parkinsonism within 20 days, while others reported Parkinsonism occurring within the first week of treatment.[6,7]

This syndrome usually subsides by reducing the dose or discontinuation of treatment. If this is not always an option, alternative strategies include replacing high-potency D2 blockade drugs (eg flupenazine) to low-potency first-generation antipsychotics (eg perfenazine) or second-generation antipsychotics (eg quetiapine). Anticholinergic adjunctive treatment (eg benztropine, trihexifenidyl, or diphydramin hydrochloride) is also often effective in repairing this syndrome. [15]

The purpose of this study was to determine the mean SAS score at the time of Parkinsonism occurrence in schizophrenic patients using haloperidol treatment based on age and onset of occurrence of parkinsonism.

ewed as multiplayer non-linear method that can re-code its input space in the hidden layers and thereby solve hard learning problems. The network is trained using ANN technique until a good agreement between predicted gain settings and actual gains is reached.

1. LITERATURE

1.1 Schizophrenia

Schizophrenia is a varied, but highly confusing, clinical syndrome involving the psychopathology of cognition, emotion, perception, and other aspects of behavior. Signs of the disease vary depending on the patient and time, but the effect of the disease is always severe and usually long. Patients with schizophrenia were noted to suffer some problems with work, school, interpersonal relationships and self-care.[1,2]

Schizophrenia is generally characterized by distortions of basic and distinctive thoughts and perceptions, and by unfair or blunted affects. A clear awareness and intellectual ability are usually maintained, although certain cognitive deficits may develop later. This disorder involves the most basic functions that give the normal person a sense of personality (individuality), uniqueness and self-direction. The most intimate or deep thoughts, feelings and actions are often felt by or shared with others, and ideals can arise, explaining that natural and supernatural forces are at work affecting the mind and the actions of the sufferer in ways that are often excluded Sense or bizarre.[8]

Schizophrenia is one of the most important public health issues in the world. A survey of the Wealth Health Organization (WHO) places schizophrenia as a ranking among the world's 10 major diseases. Although estimates of the rate of events in the general population vary from 0.5 percent to 1 percent of the population world.[9]

1.2 Antipsychotic

Pharmacologic treatment differs according to the patient's disease phase. The acute phase is usually characterized by psychotic symptoms requiring immediate clinical attention. This may appear in the first episode psychotic or more commonly a relapse in individuals who have experienced multiple episodes, usually lasting 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, where the acute symptoms are controlled, but the patient has an elapse risk if treatment is stopped or if the patient is exposed to stress, lasts for 6 months, following recovery from the acute phase. The primary goal of treatment in this phase is to combine the additional effects of treatment, with treatment similar to that used in the acute phase. The third phase is a stable phase or a maintenance phase when the illness is remission relatively or symptomatically stable. The goal of treatment during this phase is to prevent relapse or exacerbations and to help patients improve their function.[10]

Almost every patient with schizophrenia will benefit from pharmacological treatment. Antipsychotic treatment, which is a major pharmacological treatment, is effective in reducing the effects of psychotics such as hallucinations, delusions and suspiciousness. In many patients, these symptoms can be resolved thoroughly. Once these symptoms can be reduced, treatment may reduce the likelihood of reappearance of these symptoms. Finally, antipsychotics are effective in reducing the risk of relapse in stable patients with a disease that tends to relapse.[10,11]

Drugs for treating schizophrenia are divided into two main groups, typical antipsychotics and atypical antipsychotics. Typical antipsychotics further reduce positive symptoms (such as hallucinations and vision) rather than negative symptoms (such as withdrawal and affective reduction), whereas atypical antipsychotics reduce both positive and negative symptoms. Treatment with antipsychotics associated with reduced rates of side effects, among the most notable are Extrapyramidal Syndromes (EPS), such as acute dystonia, parkinsonism, akathisia and tardive dyskinesia, are the most common side effects of antipsychotic treatment.[2,4,5]

1.3 Parkinsonism

Dramatic drug-induced pyramidal side effects have been reported since early 1944, when Nagendranath De described symptoms of parkinsonism during treatment using reserpine. Eight years later, the first antipsychotic (chlorpromazine) was introduced, in the early fifties by Delay and Deniker, known as the first-generation antipsychotics, typical antipsychotics or conventional antipsychotics. In 1954, Haase described the psychomotoric syndrome of parkinsonism during treatment with chlorpromazine.[12,13]

Signs of extrapyramidal dysfunction including akinesia, tremor, dystonia and dyskinesia have been recognized in schizophrenic patients who use antipsychotic medication. Extrapyramidal dysfunction may be closely related to the neuropharmacological features of schizophrenia, but must be distinguished from the treatment effects of the disease. Current research suggests that acute and untreated illnesses may have signs of parkinsonism (4 to 28 percent), dystonia (2 to 17 percent) and dyskinesia (1 to 14 percent) .[14]

The revised fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) makes 7 categories of movement disorders caused by treatment. Categories of DSM-IV-TR include neuroleptic-induced parkinsonism, neuroleptic malignant syndrome, neuroleptic-induced acute dystonia, acute neuroleptic neuroleptic (neuroleptic-induced acute akathisia), Tardive dyskinesia caused by neuroleptic (induroleptic-induced tardive dyskinesia), neuroleptic-induced postural tremor postural trauma, and movement disturbance caused by medication-induced movement disorder not otherwise specified, .[15]

Antipsychotics is the main treatment of schizophrenia for the last 50 years. The first-generation antipsychotics introduced in the mid-20th century differed in effectiveness in relieving the symptoms of schizophrenia, often resulting in extrapyramidal side effects (EPS) such as acute dystonia, akathisia, parkinsonism and tardive dyskinesia. Neuroleptic treatment causes parkinsonism, usually after weeks to months of antipsychotic use. Typical neuroleptics (including haloperidol, fluphenazine and pimozide) are more likely to cause parkinsonism. Clinical features of neuroleptic parkinsonism and primary idiopathic parkinson disease are almost indistinguishable. The classical triage of its symptoms includes rigidity that may progress into lead pipe or cog-wheeling (discontinuous muscle movements such as gears);

Bradykinesia characterized by reduced spontaneous motor movement, slow speech, decreased arm movement during walking, and mask-like faces; And tremor, which usually exist as a slow rhythmic shake (3 to 6 Hz) affects the head, tongue, jaw, leg, and extremity on the unilateral or symmetrical side.[15]

Parkinsonism is considered an acute side effect. According to data from the 1960s associated with first-generation antipsychotics, in 50 percent of Parkinsonism cases appear in the first month of treatment, and 90 percent after 72 days of treatment. Another study saw that in most patients developing Parkinsonism within 20 days, while others reported Parkinsonism occurring within the first week of treatment.[6,7]

This syndrome usually subsides by reducing the dose or discontinuation of treatment. If this is not always an option, alternative strategies include replacing high-potency D2 blockade drugs (e.g. flupenazine) to low-potency first-generation antipsychotics (e.g. perfenazine) or second-generation antipsychotics (e.g. quetiapine). Anticholinergic adjunctive treatment (e.g. benztropine, trihexifenidyl, or dipenhydramin hydrochloride) is also often effective in repairing this syndrome.[15]

1.4 Simpson Angus Scale (SAS)

Patients were considered to have Parkinsonism criteria using Simpson-Angus Scale (SAS). SAS is an assessment scale that has 10 items of assessment scales widely used to assess neuroleptic parkinsonism, designed for the use of clinical practice and research. Consisting of 1 item assessing how to walk (hypokinesia), 6 items assess rigidity and 3 items assess glabella tap, tremor and salivation. Each is rated on a 5-point scale (0-4), and the average value is obtained by adding items and divided by 10. A value of 0 means normal, 1 means mild severity, 2 means moderate severity, ≥3 means weight. SAS is a reliable and valid instrument.[14,20]

2. METHOD

This study was an unpaired numerical analytical study with a cross-sectional study approach to look at the effects of Parkinsonism after the use of haloperidol in schizophrenic patients using the Simpson Angus Scale (SAS) rating scale based on the onset and age of parkinsonism.[21,22]

This study was conducted in January - March 2013, at the inpatient installation of Mental Hospital Prof. Dr. M. Ildrem Medan. The subjects of the study were male schizophrenic patients at Inpatient Installation of Mental Hospital Prof. Dr. M. Ildrem Medan that meets the inclusion criteria, ie acute phase schizophrenic patients who meet the criteria of diagnosis PPDGJ III, PANSS> 80 Score, 20-50 years old, use oral 10 mg multivalol per day in divided doses, cooperative patients and willing to participate in the study, can speak Indonesian. While the exclusion criteria are: organic mental disorder and general medical illness, using lithium and other drugs that cause parkinsonism, comorbidities with common medical ailments and other psychiatric disorders.

How to take the subject: non probability sampling type consecutive sampling? The number of study subjects was 35 people. All research subjects will be asked for approval and in advance will be given an explanation before being included as research subjects. The research to be executed has been approved by the Research Ethics Committee at the Faculty of Medicine, University of North Sumatra, Medan.

All male schizophrenic patients who met the inclusion criteria were briefed on the study. And for patients who are willing to follow the research and become the subject of research, are required to fill out the consent form. Schizophrenic patients treated with haloperidol 10 mg per day in divided doses, ie 2 times daily, 5 mg per beri. Then Parkinsonism using SAS at the time before drug administration and also assessed the onset of Parkinsonism, after 1-3 weeks of taking the drug. Schizophrenic patients who experience Parkinsonism after taking haloperidol are given treatment for Parkinsonism. Based on data collected conducted data processing.

3. RESULT

Table 1 shows the demographic characteristic, the age distribution of most research subjects is 20-29 years (45.7%) and the least is the age group 40 - 50 years (25,7%). The mean age of this study subjects was 31.83 with a standard deviation of 7.702. From Table 1, the onset of Parkinsonism with the distribution of Parkinsonism occurrence in the first week was 5 (14.3%), the incidence at week II was 13 (37.1%), and the incidence of Parkinsonism in the third week was 17 people (48, 6%). 1-week minimum onset and maximum 3 weeks of onset. Obtained a mean of 2.34 and a standard deviation of 0.73. In table 1, we can see the final SAS score, on

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the subject of the study there was no score of 0 (normal) and score> 3 (very severe), score 0.1-1 (mild) was found in 2 people (5.70%), score 1 , 1-2 (moderate) were found in 23 people (65.70%), and 2.1-3 (weight) score was found in 10 people (28.60%), mean 1.69 and standard deviation 0.49.

Table 1. Demographic Characteristic of Research Subject

Variabel	N	%	Mean	SD
Age			31,83	0,71
20-29 years old	16	45,70		
30-39 years old	10	65,70		
40-49 years old	9	28,60		
Onset of Parcinsonism			2,34	0,73
Week I	5	14,30		
Week II	13	37,10		
Week III	17	48,60		
Baseline SAS Score				
Normal (score = 0)	35	100	0	0
SAS score After treatment			1,69	0,49
Normal (score : 0)	0	0		
Light (score : 0,1-1)	2	5,70		
Medium (score : 1,1-2)	23	65,70		
Heavy (score : 2,1-3)	10	28,60		
Very Heavy (score >3)	0	0,00		

Based on Table 2, it was found out that the age of incidence of Parkinsonism was 40-50 years, which appeared in the first week (14.3%) and at the age of 20 - 29 years appeared at week III (37.1%), with p = 0.001 (P <0.005)

Tabel 2. Distribusi Onset Terjadinya Parkinsonisme berdasarkan Umur

		Onset Week I		Onset Week II		Onset Week III		P
		Frequency	%	Frequency	%	Frequency	%	
Age	20 – 29	0	0	3	8,6	13	37,1	
	30 – 39	0	0	6	17,1	4	11,4	0,001
	40 – 50	5	14,3	4	11,4	0	0	
Total		5	14,3	13	37,1	17	48,6	

From table 3 the results obtained at age 20 - 29 SAS scores most were 14 people (40%) and at age 30 - 39 years the most scores were 10 (28,57%) p value = 0,001 (p <0,005).

Tabel 3. Distribusi Skor SAS setelah pegobatan menggunakan haloperidol

Usia	Skor SAS awal	Skor SAS Akhir								P
		Ringan		Sedang		Berat		Sangat Berat		
		Frek	%	Frek	%	Frek	%	Frek	%	
20 – 29	0	14	40	2	5,71	0	0	0	0	
30 – 39	0	0	0	10	28,57	0	0	0	0	0,001
40 – 50	0	0	0	6	17,14	2	5,71	0	0	

4. DISCUSSION

From the results of the study, the fastest onset of Parkinsonism was found in week I was 5 people (14.3%), the incidence in week II was 13 people (37.1%), and the incidence of Parkinsonism in the third week was 17 people (48.6%). 1 week minimum onset and maximum 3 weeks of onset. This is in accordance with previous studies of Parkinsonism appearing within 1 to several weeks

The result showed that there were no research subjects with SAS score 0 (normal) and> 3 (very heavy), with score of 0-1 (mild), 2 people (5,7%), 1-2 (moderate) were 23 (65,7%), and score 2-3 was 10 people (28,6%). This suggests that Parkinsonism in this study subjects are the most moderate (between

scores 1 - 2). Table 2 shows that the younger age (20 - 39 know) the longer the presence of Parkinsonism (37%), and the older age (40 - 50 years) the faster the rise of Parkinsonism. According to William G Ondo mentioned that the incidence of Parkinsonism due to neuroleptic treatment increases with age increasing.[18]

5. CONCLUSION

The subjects of the study were 35 persons, acute phase physiophrenic patients admitted to Prof. Mental Hospital. Dr. M. Ildrem Medan period January 2013 to February 2013. From this study found a significant difference in the emergence of Parkinsonism based on age and onsetnya assessed by using SAS. Where an increase in the onset of Parkinsonism increases with age.

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