

## A cross sectional study of trihexyphenidyl utilization on patient receiving antipsychotic therapy

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### ABSTRACT

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**Background:** Psychotic disorder becomes a mental health problem recently that reduce quality of life of the patient. As the matter of fact, psychotic treatment induce another problem such as extrapyramidal symptoms (EPS). Trihexyphenidyl is the first choice as conjunctive treatment to prevent EPS.

**Objective:** To determine the description and characteristics of trihexyphenidyl utilization on patient with psychotic who receive antipsychotic therapy at Ghrasia Hospital Yogyakarta.

**Methods:** This study is a non-experimental descriptive with cross sectional design with the secondary data obtained from the medical record of patients with psychotics on January 2014 – January 2015 to perceive the utilization of trihexyphenidyl on patient who receive antipsychotic therapy at Ghrasia hospital. The sample is determined by Slovin formula, the data is analyzed with univariate analysis technique.

**Results:** The majority of psychotic patients at the Ghrasia Hospital are about 25-40 years old (61,7%). It describes that the pattern of the psychotic disorder most likely happening at middle age, which 98 patients are male (63,6%). The combination of two antipsychotics becomes the most used regimen at Ghrasia, 113 patients (73,4%) receive the combination of two antipsychotics therapy, 39 patients (25,3%) receive single antipsychotic therapy and 2 patients (1,3%) receive the combination of three antipsychotics. 136 patients (88,3%) receive trihexyphenidyl twice a day on undefined schizophrenia 65 patients (42,2%) and 18 patients (11,7%) once a day. 149 patients (96,8) are not examined before THP is given before the initiation of the therapy.

**Conclusion:** Administration trihexyphenidyl as adjunctive therapy is given to the psychotic patients twice a day and most of them are not initiated by the examination of syndrome extrapyramidal.

**Latar belakang :** Gangguan psikotik menjadi masalah kesehatan yang sangat menurunkan kualitas hidup penderitanya, pengobatan psikotik menggunakan obat antipsikotik ternyata menimbulkan masalah lain karena munculnya efek samping ekstrapiramidal (EPS), triheksifenidil merupakan pilihan terapi pendamping untuk menahan munculnya EPS.

**Tujuan :** Mengetahui gambaran penggunaan Triheksifenidil pada pasien yang mendapatkan Terapi Antipsikotik di RS Grhasia.

**Metode :** Penelitian ini merupakan penelitian non eksperimental jenis deskriptif dengan menggunakan pendekatan cross sectional dengan melihat data sekunder yang diperoleh dari catatan rekam medis pasien psikotik di RS Grhasia Yogyakarta periode Januari 2014 – Januari 2015 untuk mengetahui gambaran penggunaan Triheksifenidil pada pasien yang mendapatkan Terapi Antipsikotik di RS Grhasia. Penentuan sampel ditentukan dengan rumus slovin, olah data dilakukan dengan teknik analisis univariat.

**Hasil :** Kategori terbanyak dari pasien psikotik di RS Grhasia berkisar usia 25-40 tahun (61,7%). Hal ini memberikan gambaran bahwa pola gangguan psikotik cenderung terjadi pada golongan umur paruh baya, sebanyak 98 pasien (63,6%) berjenis kelamin laki-laki. Regimen kombinasi dua antipsikotik menjadi pilihan terapi yang paling banyak digunakan di RS Grhasia, sebanyak 113 pasien (73,4%) mendapatkan terapi kombinasi dua anti psikotik, 39 pasien (25,3%) mendapatkan terapi antipsikotik tunggal dan 2 pasien (1,3%) mendapatkan terapi kombinasi tiga obat antipsikotik. Sebanyak 136 pasien (88,3%) pasien mendapatkan triheksifenidil dengan frekuensi dua kali sehari dengan diagnosis terbanyak skizofrenia tak terinci yaitu 65 pasien (42,2%) dan 18 pasien (11,7%) yang mendapatkan triheksifenidil dengan frekuensi satu kali sehari. Sebanyak 149 pasien (96,8%) tidak diperiksa gejala EPS sebelum pemberian triheksifenidil.

**Kesimpulan :** Pemberian triheksifenidil sebagai terapi ajungtif diberikan pada semua pasien, sebagian besar diberikan 2 kali sehari, dan sebagian besar tidak didahului dengan pemeriksaan EPS.

## INTRODUCTION

According to UU no. 23 tahun 1992, health is defined as a well-being condition of body, mind, and social life which enables every individual to live productively in terms of socially and economically. Hence it can be concluded that mental health plays a major part which cannot be separated from an individual's health.<sup>1</sup>

Schizophrenia is a mental disease that has gained worldwide concern because it degrades an individual's function as a human being. It interferes with our daily life functions, for instance : grooming, working or educational activities, and fulfilling our role to build a relationship with our surroundings.<sup>2</sup> An epidemiology research indicates that schizophrenia occurs in every population with the prevalence rate 1,4 – 4,6 per 1000 and average incidence rate at 0,16 - 0,42 per 1000 population.<sup>3</sup>

Schizophrenia patients experience a disturbance to coordinate their minds, emotions, and behaviors. Every patients has different and wide varieties of symptoms, like : loss of communication skill, degradation of cognitive functions, loss of verbal skills, memory loss, emotional instabilities, and loss of social adaptation skills.<sup>3</sup>

Antipsychotic medicine has been the

main treatment for schizophrenia since the 1950s. It can be used to treat the symptoms of schizophrenia, as well as a prophylaxis of recurrent episodes.<sup>3</sup> The treatment for schizophrenia is divided into 3 stages : initial treatment within the first 7 days, stabilization treatment for 6 – 8 weeks, and maintenance therapy for 12 months after improvement of the first episodes. Meanwhile, for patients with recurrent episodes, maintenance therapy has to be done for at least 5 years.<sup>4</sup>

About 50% of schizophrenia patients does not respond adequately to first-generation antipsychotic medicine.<sup>2,5</sup> It induces unwanted side effects, such as : acute dystonia, sub-acute Parkinson, and akathisia. Antipsychotic medicine can also induce extrapyramidal symptoms due to the blockage of Dopamine D2 receptors by stopping dopamine activities.<sup>6</sup> The most common forms of extrapyramidal symptoms is the Parkinson syndrome or, so-called, Parkinsonism.<sup>7</sup> Parkinson syndrome has similar manifestations as Parkinson disease, including bradykinesia, extremities rigidity, and unstable posture.<sup>7</sup> These symptoms usually occur within the first month of treatment.<sup>8,9</sup>

Extrapyramidal symptoms might occur from the very beginning of antipsychotic treatment –depending on the dosage of antipsychotic drugs in use. To resolve it, physicians can use anti-cholinergic medicine, such as atropine sulfate, trihexyphenidyl, and diphenhydramine. Trihexyphenidyl is the most commonly used anti-cholinergic drugs for extrapyramidal symptoms.<sup>10</sup>

There are two divided opinions about the use of trihexyphenidyl to treat extrapyramidal symptoms –one encourage its routine usage as prophylactic medicine, while the other is against it.<sup>11</sup> Trihexyphenidyl has a lot of impact in antipsychotic treatment, hence a rigid guideline about its usage in antipsychotic treatment is needed.

A lot of literatures has mentioned a few factors to consider before using trihexyphenidyl, including patient's age, gender, types of antipsychotic drugs, and history of previous extrapyramidal symptoms.<sup>12</sup> This research will describe the characteristics of trihexyphenidyl usage in patients who receive antipsychotic

therapy at Grhasia Hospital Yogyakarta.

## **METHODS**

This research is a non-analytic descriptive study with a cross sectional design, which describe the real condition to perceive the characteristics of patients who receive trihexyphenidyl treatment in companion with antipsychotic therapy at Grhasia Hospital Yogyakarta. This research was done within September – October 2015.

### **Research populations and samples**

The target population for this research is all psychotic inpatients who receive trihexyphenidyl within January 2014 – January 2015 at Grhasia Hospital Yogyakarta.

Samples include all inpatients who receive trihexyphenidyl in companion with antipsychotic treatment, who meet the inclusion criteria, and has a complete medical record at Grhasia Hospital. Sample size is 154 patients— determined using the Slovin formula.

The inclusion criteria in this research includes patients who is diagnosed with Schizophrenia (F20-F25), enlisted as inpatients at Grhasia hospital, and has a complete medical record (patient's biodata, antipsychotic treatment history, extrapyramidal symptoms status, and history of trihexyphenidyl usage).

This research excludes patients who is diagnosed with Schizophrenia accompanied with other psychiatric diagnosis, or those with incomplete medical record, or those who continues treatment at another health facilities.

Data collection was done by collecting secondary data gained from inpatients medical record which stated the usage of trihexyphenidyl in addition to antipsychotic treatment at Grhasia Hospital within January 2014 – January 2015.

### **Data Processing**

Data was processed with quantitative approach. It was done through several steps, which were (1) Data was given a code (coding), which was done to classify data and gave a certain code to a certain data to simplify data

input. (2) Data management (Editing), which was done to filter error or unprecise data, so that it could be traced back and fixed. (3) Data structuring, which was done to arrange data based on the software and analysis that would be used. (4) Data entry, which was done by inputing computerize data to microsoft excel. (5) Data cleaning, which was done to maintain the quality of data by cleaning it from possible errors. Data cleaning was done by tracing missing datas.

### **Data Analysis**

Data analysis was done with univariate analysis to determine the distribution and characteristic of trihexyphenidyl usage in inpatients who received antipsychotic therapy at Grhasia Hospital within January 2014 – January 2015. All variables in this research are categorical variables, hence result will be shown in proportion.

## **RESULTS**

This research was done at Grhasia hospital Yogyakarta. Sample size was 154 psychotic inpatients within the periode of January 2014 – January 2015. Result shows that most psychotic patients are within the age group of 25 – 40 years old (61,7%), mostly male (63,6%), and mostly given two types antipsychotic regimens (73,4%).

In table 2, it can be seen that 96,8% of all patients were given trihexyphenidyl therapy without receiving initial EPS examinations

In table 3, it can be seen that most psychotic patients was diagnosed with Undifferentiated Schizophrenia, 69 patients (44,8%). While only 2 patients (1,3%) were diagnosed with Acute and transient psychotic disorder unspecified.

Other diagnosis include Paranoid Schizophrenia in 41 patients (26,6%), Schizoaffective Disorder manic type in 19 patients (12,3%), Residual Schizophrenia in 14 patients (9,1%), and Catatonic Schizophrenia in 9 patients (5,8%).

Table 1 Demographic Characteristic of Psychotic Patients

Subject characteristics	Total (N=154)	%
<b>Age (years)</b>		
18 – 25	24	15,56%
25 – 40	95	61,7%
>40	35	22,7%
<b>Gender</b>		
Female	56	36,4%
Male	98	63,6%
<b>Antipsychotic regiments</b>		
One type of antipsychotic	39	25,3%
Two types of antipsychotic	113	73,4%
Three types of antipsychotic	2	1,3%

Table 2 Extrapiramidal examination before the initiation of Trihexyphenidyl treatment

EPS Examination	Total(N=154)	%
Yes	5	3,2%
No	149	96,8%

Table 3 Diagnostic Distribution

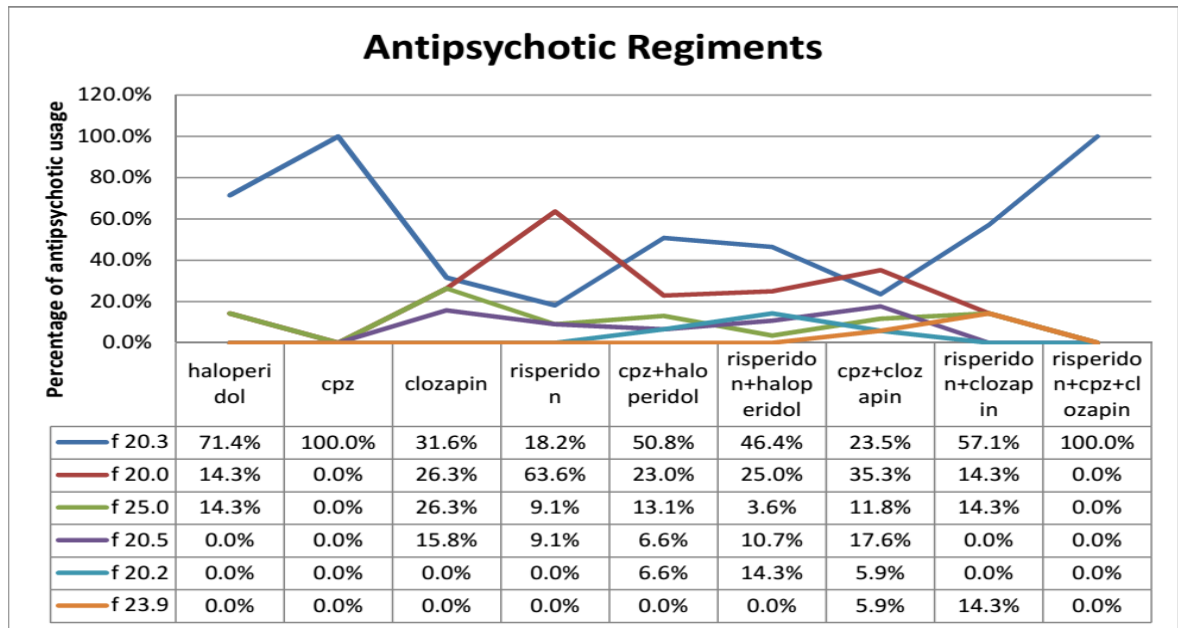
ICD-X	Diagnosis	Total (N=154)	%
F20.3	Undifferentiated Schizophrenia	69	44,8%
F20.0	Paranoid Schizophrenia	41	26,6%
F25.0	Schizoaffective Disorder, Manic type	19	12,3%
F20.5	Residual Schizophrenia	14	9,1%
F20.2	Catatonic Schizophrenia	9	5,8%
F23.9	Acute and Transient Psychotic Disorder, unspecified	2	1,3%

Table 4 Trihexyphenidyl Usage Distribution

Diagnosis	THP (2 mg)		Total (%)
	Once daily (%)	Twice daily(%)	
Undifferentiated Schizophrenia (F20.3)	4 (2,6)	65 (42,2)	69 (44,8)
Paranoid Schizophrenia (F20.0)	5 (3,2)	36 (23,4)	41 (26,6)
Schizoaffective Disorder, Manic type (F 25.0)	3 (1,9)	16 (10,4)	19 (12,3)
Residual Schizophrenia (F 20.5)	4 (2,6)	10 (6,5)	14 (9,1)
Catatonic Schizophrenia (F 20.2)	1 (0,6)	8 (5,2)	9 (5,8)
Acute and Transient Psychotic Disorder, unspecified (F 23.9)	2 (1,3)	0 (0)	2 (1,3)
Total	18 (11,7)	136 (88,3)	154 (100)

From table 4, we can conclude that in Grhasia Hospital, trihexyphenidyl was mostly given twice daily 136 patients (88,3%) : in Undifferentiated Schizophrenia 65 patients (42,21%), Paranoid Schizophrenia 36 patients (23,38%), Schizoaffective disorder manic type

16 patients (10,39%), Residual Schizophrenia 10 patients (6,49%), Catatonic Schizophrenia 8 patients (5,19%), and Acute and Transient Psychotic Disorder unspecified 2 patients (1,30%). All psychotic patients was given trihexyphenidyl in 2 mg preparation.



Picture 1 Antipsychotic regiments usage in diagram

Two antipsychotic combination were the most used treatment regiments, and chlorpromazine combined with haloperidol was the most prescribed combination 61 patients (39,6%).

It was mostly used in patients diagnosed with undifferentiated schizophrenia 31 patients (50,8%). In single regiments Chlozapine was used the most, which was in 19 from 154 patients (12,3%).

Three drugs combination was rarely used and only contain one regiment of combination which include Risperidone, Chlorpromazine, and Stelazine. This was given to 2 patients who was diagnosed with Undifferentiated schizophrenia.

**DISCUSSION**

Most psychotic patients in RS Grhasia Yogyakarta is within the age group of 25-40 years old. This might indicate that the middle-aged group is more prone to psychotic disorder. Another research that was done in Padang also

indicate the same result, where 25 patients (16,23%) were within the age group of 15-25 years old, 41 patients (26,62%) were within the age group of 26-35 years old, 29 patients (18,83%) were within the age group of 36-45 years old, 9 patients ( 5,84%) were within the age group of 46-55, and 4 patients (2,59%) were above 56 years old. Another research in RSCM showed that most psychotic patients were within the age group of 31-40 years old (35%) and 21-30 (32%).<sup>11</sup>

In this research, result showed that most psychotic patients are male. From 154 research subjects, 98 patients (63,6%) were male, and only 56 patients (36,4%) were female. This result is inline with previous research in Bapujji Hospital where 71 psychotic patients (71%) were male and only 39 patients (39%) were female. According to this result, we can conclude that there are no significant proportion difference between gender (Sushma, 2015). Another research in RSCM Jakarta in which 97

psychotic patients were involved, showed 57,7% of psychotic patients were male, and the rest were female.<sup>11</sup>

In present findings, two antipsychotic drugs combination are found to be the most prescribed regiment. It was used in 113 patients (73,4%). While 39 patients (25,3%) received single antipsychotic regiments, and 2 patients (1,3%) received three antipsychotic drugs combination. Previous research also showed that combination therapy (94%) was more preferred than monotherapy (6%).<sup>14</sup>

Trihexyphenidyl usage as a prophylactic treatment, which means it was given before EPS occur, is expected to increase patient adherence towards treatment.<sup>11</sup> Nevertheless, its usage is still controversial, because not only it repress the occurrence of EPS and other negative side effects, but it also increase the occurrence of active psychotic symptoms and altered cognitive functions in elderly patients.

The high usage of trihexyphenidyl as a prophylaxis in this research might be due to a substantial amount of atypical antipsychotic drugs use and combination therapy regiments which became the predictor of EPS occurrence.<sup>15</sup>

## CONCLUSION

Most psychotic patients in RS Grhasia Yogyakarta is within the age group of 25-40 years old. This might indicate that the middle-aged group is more prone to psychotic disorder.

Most research subjects are male. From 154 research subjects, 98 patients (63,6%) were male, and only 56 patients (36,4%) were female.

Two antipsychotic drugs combination are found to be the most prescribed regiment. It was used in 113 patients (73,4%), while 39 patients (25,3%) received single antipsychotic regiments, and 2 patients (1,3%) received three antipsychotic drugs combination.

Most patient in this research was given trihexyphenidyl 2 mg twice daily— 136 patients (88,3%), in which most of them were diagnosed with Undifferentiated Schizophrenia (65 pasien or 42,2%), while the other 18 patients (11,7%) received trihexyphenidyl 2 mg once daily.

149 patients (96,8%) was not evaluated with initial EPS examination before receiving

trihexyphenidyl treatment, while 5 others (3,2%) undergo initial EPS examination.

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