

Drug Related Problems (DRP's) Analysis of Antipsychotics Use in Schizophrenia Patients at Mental Hospitals of Southeast Sulawesi Province in 2021

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ABSTRACT

Schizophrenia is a psychiatric disorder with a high incidence at the Mental Hospital of Southeast Sulawesi. Problems related to the use of drugs that are often encountered in hospitals are inaccuracies in drug administration, inaccurate dosing and drug abuse. This problem can affect the success of therapy. This study aims to determine the pattern of drug use and the prevalence of Drug Related Problems (DRPs) in Schizophrenia patients based on the correct dosage parameter. This research is an observational type with a cross sectional design. The duration of the study was 1 month taking into account the inclusion and exclusion criteria. Patients with a diagnosis of schizophrenia, aged >17 years and have a complete medical record are the inclusion criteria whereas patients with incomplete medical records, death status/forced to go home and still being treated are exclusion criteria. The total number of samples analyzed was 250 patient medical records. The results showed that the majority of Schizophrenia patients at the Mental Hospital of Southeast Sulawesi Province were male (80%) with an age range of 20-45 years (71.6%). The last education level is in the medium category (65.2%). Based on the diagnosis of the type of schizophrenia, the patient was in the category of paranoid schizophrenia (51.6%) with positive symptoms (74.8%). The pattern of psychotic drug use used by Schizophrenia patients at the Mental Hospital of Southeast Sulawesi Province in 2021 is a single pattern and the most widely used single drug combination pattern is risperidone (atypical) (35.6%) and a combination pattern, namely chlorpromazine + risperidone (typical +atypical) (27.2%). The prevalence of DRP's based on the correct dose is 0%. DRP's did not occur for the use of antipsychotic drugs in Schizophrenia patients at the mental hospital of Southeast Sulawesi Province in 2021.

Keywords: Schizophrenia, Antipsychotics, Drug Related Problems (DRP's)

ABSTRAK

Skizofrenia merupakan gangguan kejiwaan dengan angka kejadian yang cukup tinggi di Rumah Sakit Jiwa Provinsi Sulawesi Tenggara. Masalah terkait penggunaan obat yang sering ditemui di Rumah Sakit adalah ketidaktepatan pemberian obat, ketidaktepatan pemberian dosis dan penyalahgunaan obat. Masalah ini dapat mempengaruhi keberhasilan terapi. Penelitian ini bertujuan untuk mengetahui pola penggunaan obat dan prevalensi terjadinya *Drug Related Problems* (DRPs) pada pasien skizofrenia berdasarkan parameter tepat dosis. Penelitian merupakan jenis observasional dengan rancangan *cross sectional*. Lamanya penelitian selama 1 bulan dengan memperhatikan kriteria inklusi dan eksklusi. Pasien dengan diagnosis skizofrenia, usia >17 tahun dan memiliki rekam medik lengkap merupakan kriteria inklusi. Sedangkan pasien dengan rekam medik yang tidak lengkap, status meninggal/dipaksa pulang dan masih dirawat merupakan kriteria eksklusi. Total jumlah sampel yang dianalisis sebanyak 250 rekam medik pasien. Hasil penelitian menunjukkan bahwa pasien skizofrenia di Rumah Sakit Jiwa Provinsi Sulawesi Tenggara mayoritas berjenis kelamin laki-laki (80%) dengan rentang usia 20-45 tahun (71,6%). Tingkat Pendidikan terakhir kategori sedang (65,2%). Berdasarkan diagnosis tipe skizofrenia, pasien masuk dalam kategori skizofrenia paranoid (51,6%) dengan gejala positif (74,8%). Pola penggunaan obat psikotik yang digunakan pasien skizofrenia di Rumah Sakit Jiwa Provinsi Sulawesi Tenggara pada tahun 2021 adalah pola tunggal dan kombinasi. penggunaan obat tunggal yang paling banyak digunakan adalah risperidone (atipikal) (35,6%) dan pola kombinasi yaitu klorpromazin + risperidon (tipikal+atipikal) (27,2%). Prevalensi terjadinya DRP's berdasarkan ketepatan dosis adalah 0%. Tidak terjadi DRP's untuk penggunaan obat antipsikotik pada pasien skizofrenia di Rumah Sakit Jiwa Provinsi Sulawesi Tenggara tahun 2021.

Kata kunci: Skizofrenia, Antipsikotik, *Drug Related Problems* (DRP's)

INTRODUCTION

Schizophrenia is a type of mental illness that affects the quality of life of sufferers. Schizophrenia patients will usually experience hallucinations, delusions and thought disturbances in the moderate to severe category (Buhar et al., 2022). WHO reports that around 21 million people are diagnosed with schizophrenia. Indonesia in 2019 was reported as the country with the highest number of schizophrenics in the Southeast Asia region. Countries with a large number of people with schizophrenia are also Vietnam, the Philippines and Myanmar. The 2018 Basic Health Research (Riskesdas) shows that the prevalence of schizophrenia/psychosis in Indonesia is 6.7 per 1000 households. The highest distribution of prevalence is found in Bali and DI Yogyakarta. In general, the results of the 2018 *Riskesdas* research also stated that as many as 84.9% of people with schizophrenia/psychosis in Indonesia had received treatment. However, those who did not take the medicine regularly were slightly lower than those who took the medicine regularly. Central Medic data from the Mental Hospital of the Province of Southeast Sulawesi noted that in 2017 there were 1089 visits of ODGJ patients with types of mental disorders namely schizophrenia, depression, organic mental disorders and other non-organic psychotic disorders. In 2018 this number decreased by 992 visits and increased again in 2019 with 1120 visits.

The results of preliminary observations by researchers at the Mental Hospital Education and Training Board for the Province of Southeast Sulawesi show that schizophrenia is one of the psychiatric disorders that is ranked in the top ten where the incidence rate is quite high reaching 650 inpatients.

One of the treatments for this disease is the administration of antipsychotic drugs. The principle of treatment will look at the symptoms caused and the patient's clinical condition. The use of these antipsychotic drugs often causes incompatibilities that also affect patient therapy. Previous studies have shown that the incidence of medication noncompliance in Schizophrenia patients is common. DRP's that occurred in Ratnasari's study (2018) were drug interactions (62.5%), inappropriate drug choices (19.44%), contraindications (11.11%), polypharmacy (4.17%) (Ratnasari, 2018). Other research also showed that there were DRP's (89.5%) in moderate severity with 117 events (Utami et al., 2022). Based on the

description above, the researcher is interested in analyzing the prevalence of Drug Related Problems (DRPs) based on the right dose parameter in the use of antipsychotics in Schizophrenia patients at the Mental Hospital of Southeast Sulawesi Province.

The results of the research are expected to be used as material for study and evaluation for the rational use of drugs for Schizophrenia patients, as well as a reference and information for doctors in prescribing drugs and achieving appropriate therapy for pharmacists at the Mental Hospital of the Province of Southeast Sulawesi.

RESEARCH METHODS

Research Design

This research is observational type research with cross sectional design. Data collection was carried out retrospectively using secondary data in the form of medical records of Schizophrenia patients who received antipsychotic drug therapy and received treatment at the Inpatient Installation of the Mental Hospital of Southeast Sulawesi Province. Data collection was started from September to October 2021. Patients with a diagnosis of schizophrenia who have a complete medical record, receive a single or combination treatment are inclusion criteria while patients with incomplete medical records, death status /forced to go home and still being treated are the exclusion criteria in this study. The research instrument was in the form of a data collection sheet containing patient identity information and medical record data of Schizophrenia patients.

Data Analysis

Data analysis used univariate analysis. The characteristics of the patients analyzed included gender, age, occupation, education, disease diagnosis, length of hospitalization and medical history. The data is processed quantitatively and displayed in the form of a frequency distribution according to the parameters it has. Analysis of Drug Related Problems (DRPs) based on the right dose parameter was analyzed using the 2019 National Formulary, National Guidelines for Psychiatric Services 2015 and Koda-Kimble & Young's Applied Therapeutics The Clinical Use Of Drugs, ed 10 2013.

RESULTS AND DISCUSSION

Patient Characteristics

The results of the study show that 80% of Schizophrenia patients being treated at the Mental

Hospital in the Province of Southeast Sulawesi in 2021 were male patients. This figure was higher than the number of female patients (20%). This occurs because the dopaminergic activity is higher in males than in females. Anatomically and physiologically, men have higher levels of norepinephrine and serotonin than women (Saputra et al., 2020). In Ih et al., (2016) it was also said that schizophrenia was 1.4 times more common in men than women (Ih et al., 2016). Usually schizophrenia often occurs in late adulthood and rarely occurs before adolescence because this age range is filled with many stressors and carries a large burden of responsibility (Yulianti et al., 2017).

As many as 32.8% of patients were at a low level of education, followed by patients with middle levels of education (65.2%) and 57.6% did not work. a low level of education tends to have a low quality of life due to lack of knowledge. This can be a cause of vulnerability to mental disorders such as schizophrenia (Ih et al., 2016). Work can be one of the factors causing schizophrenia disorders, such as feeling uncomfortable in the office/workplace because of very many job demands or because not comfortable with people around the workplace. Likewise with those who do not have a job even with a greater level of risk of developing schizophrenia due to being unemployed for too long, as well as difficult economic demands that cause severe stress to depression. Table 1 shows the length of hospitalization of Schizophrenia patients on average 10-100 days (80.8%).

Based on the type of schizophrenia diagnosed by the doctor, the most dominant clinical type in schizophrenia patients at the Mental Hospital of the Province of Southeast Sulawesi in 2021 was the paranoid schizophrenia type (51.6%) followed by the unspecified type of schizophrenia (45.2%). Paranoid schizophrenia disorder is a type of schizophrenia that is often found in any country (Fadilla & Puspitasari, 2016). Hallucinations are a symptom that is often felt by patients. This is consistent with the positive symptoms shown by Schizophrenia patients at the Mental Hospital of the Province of Southeast

Sulawesi, which is 74.8%. The results of this study are in line with the positive symptoms experienced by Schizophrenia patients at the Madani mental hospital of Central Sulawesi. Patients experience delusions, hallucinations and incoherence (Fahrul et al., 2014).

Profile of Antipsychotic Drugs Use in Schizophrenia Patients at the Mental Hospitals of Southeast Sulawesi Province in 2021

Antipsychotic drugs are the main therapy in patients with a diagnosis of schizophrenia. The pattern of use used is single and combination. For a single drug pattern, there are typical and atypical types. For the typical type of drug, haloperidol (8%) was used more than the other types, while the atypical type was risperidone (35.6%). These results are in line with studies (Faqih et al., 2021) and (Ih et al., 2016) which used haloperidol and risperidone for the treatment of schizophrenia. Haloperidol and risperidone are prescribed according to the diagnosis and clinical condition of each patient. the use of risperidone is good for patients who show positive or negative symptoms. This is because the level of effectiveness is considered high. Risperidone has extrapyramidal side effects which are generally milder than other types of antipsychotics (Abdulah et al., 2017). In addition to antipsychotic drugs, adjuvant drugs were also given, including trihexipenidyl and diazepam. The suitability of drug therapy can be seen from the condition of the patient's discharge, where most of the patients went home in a calm state and a small number of patients came home in an improved condition.

In addition to the single drug pattern, Schizophrenia patients are also given a combination drug pattern. In this study, it was known that the combination pattern used was chlorpromazine and risperidone (27.2%). The use of antipsychotic combinations can produce varied and larger receptor targets. As a result, the use of this combination can increase the efficacy of antipsychotics by increasing the dopaminergic D2 receptor antagonists additively and is expected to reduce the side effects associated with the dose of each drug (Handayani et al., 2017).

Table 1. Characteristics of Schizophrenia Patients at the Mental Hospital of Southeast Sulawesi Province in 2021

No	Patient Characteristic	Number (n)	Percentage (%)
1	Age (Year)		
	<20	16	6,4
	20-45	179	71,6
	>45	55	22
2	Gender		
	Woman	50	20
	Man	200	80
3	Last Education		
	Low	82	32,8
	Middle	163	65,2
	High	5	2
4	Occupation		
	Work	106	42,4
	Does not Work	144	57,6
5	Diagnosis of the Schizophrenia Type		
	Paranoid Schizophrenia	129	51,6
	Unspecified Schizophrenia	113	45,2
	Ytt Schizophrenia	5	2
	Residual Schizophrenia	2	0,8
	Hebephrenic Schizophrenia	1	0,4
6	Symptom		
	Positive	187	74,8
	Negative	63	25,2
7	Length of Hospitalization		
	<10 days	38	15,2
	10-100 days	202	80,8
	>100 days	10	4

Table 2. Profile of Antipsychotic Drugs Use in Schizophrenia Patients at Mental Hospitals of Southeast Sulawesi Province in 2021

No.	Types of Antipsychotics	Medicine Name	Number (n)	Percentage (%)
1	Typical	Haloperidol	20	8
		Klorpromazin	9	3,6
2	Atypical	Risperidon	89	35,6
		Klozapin	3	1,2
		Olanzapin	2	0,8
3	Combination	Haloperidol + Klorpromazin	21	8,4
		Haloperidol + Klorpromazin +	34	13,6
		Lodomer (haloperidol inj)		
		Haloperidol + Risperidon	4	1,6
		Klorpromazin + Risperidon	68	27,2

DRP's Analysis of Antipsychotics Use in Schizophrenia Patients at the Mental Hospitals of Southeast Sulawesi Province.

DRP's analysis in this study focused on the accuracy of the dosing. The initial dose is started with a lower dose then increased. administration of high doses is done by looking at the patient's condition. The results of the analysis of the accuracy of the dose can be seen in Table 3. The

Table 3. DRP's Analysis of antipsychotics use in Schizophrenia patients at the Mental Hospital of Southeast Sulawesi Province

No.	DRP's Type	Number of Patients	DRPs Percentage (%)
1	Overdose	0	0
2	Less dose	0	0
3	Appropriate dose	250	100
Number		250	0

These results are in line with research by Paramitha et al., (2018) and Fahrul et al., (2014) which analyzed whether there was an incidence of DRP's in use of antipsychotics in Schizophrenia patients. The results showed that the use of antipsychotic drugs was in the right category of indication, right patient and right dose (Paramitha et al., 2018).

The patient has been diagnosed with DRP's when there is an antipsychotic dose. If the dose given is less than the therapeutic dose, the desired therapeutic effect will not be achieved, so that it will cause symptoms that cannot be suppressed and treatment will be in vain because the goal of therapy is not achieved. The results showed that there were no antipsychotics given under therapeutic doses in the treatment of schizophrenia (0%). Likewise, administration of drugs above therapeutic doses was not found in this study (0%). Giving antipsychotics at doses that exceed the maximum dose can increase the risk of antipsychotic toxicity. Mild toxicity may include increased sedation, hypotension, and miosis. Meanwhile, severe toxicity can be in the form of agitation, delirium, seizures, cardiac arrhythmias, increased respiration, and even coma can occur.

CONCLUSION

Based on the results of the study, it can be concluded that the pattern of use of antipsychotic drugs given to Schizophrenia patients at the Mental Hospital of Southeast Sulawesi Province in 2021 is a single type (49.2%) and a combination (50.8%). The most common single antipsychotic

results of the study show that the DRP's incidence rate in 2021 is 0%, in other words the use of antipsychotics in Schizophrenia patients at the Mental Hospital of Southeast Sulawesi Province is in accordance with the standard of therapy used, namely the 2019 National Formulary, National Guidelines for Psychiatric Services 2015, Koda-Kimble & Young's Applied Therapeutics The Clinical Use Of Drugs, ed 10 2013.

was risperidone (35.6%) while for the combination pattern the most used was chlorpromazine + risperidone (27.2%). There are no DRP's for the use of antipsychotic drugs at the Mental Hospital of Southeast Sulawesi Province in 2021. The doses of drugs given are correct and appropriate.

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