


The Effect Of Atypical Antipsychotic Administration On Weight Changes In Patients With Mood Disorders At Dadi Regional Special Hospital, South Sulawesi Province

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Article Info	ABSTRACT
Keywords: Atypical Antipsychotics, Weight, Mood Disorders.	Antipsychotic medications are often used to treat mood disorders. Atypical antipsychotics are currently the first-line treatment for patients with mood disorders. However, they can have side effects, significant metabolic side effects, such as central adiposity and weight gain. This study was conducted with the aim of analyzing the Effect of Atypical Antipsychotic Administration on Weight Change in Mood Disorder Patients at the Dadi Regional Special Hospital, South Sulawesi Province. Using descriptive research design with cross sectional method, with a sample of 27 informants. The results of the study. The results showed a significant difference between body weight before and after treatment, the provision of atypical antipsychotic therapy for 1 month showed significant changes in weight measurements of patients with mood disorders on average 0.5 kg - 2 kg. Giving atypical antipsychotic therapy for 2 months showed significant changes in weight measurements of patients with mood disorders on average 2 kg - 5 kg.
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INTRODUCTION

A person's mood is described as an intense and long-lasting internal emotion that affects almost every aspect of his or her behavior in the external world. Marked emotional disturbance is the hallmark of mood disorders, often known as affective disorders (the lowest severity is called depression, while the maximum severity is called hypomania or mania). This is a common mental illness that increases morbidity and mortality. (1)

Mood disorders are characterized by a decrease in mood that lasts for at least two weeks and is accompanied by decreased energy, lack of interest, and enthusiasm. There are a number of reasons thought to contribute to depression, including biological problems related to an imbalance of neurotransmitters in the brain, namely low levels of serotonin, dopamine, and norepinephrine.(2)

Antipsychotics are known as neuroleptics, widely used to treat patients with mental disorders. The use of antipsychotics has the effect of blocking dopaminergic and serotonergic receptors which causes a decrease in symptoms. The mechanism of weight gain induced by *Antipsychotic Induce Weight Gain (AIWG)* is generally hypothesized by changes in glucose metabolism and increased cholesterol and triglyceride levels. (3)

Thus, increasing the possibility of insulin resistance and can cause arterial hypertension leading to metabolic syndrome. Specifically, antipsychotics affect neuropeptides related to appetite control and energy metabolism such as leptin, adiponectin, and ghrelin. Changes in the levels of these neuropeptides have been shown to have a direct impact on weight gain by increasing the release of triglycerides and *Very Low Density Lipoproteins (VLDL)*. (3)

Antipsychotic medications are often used to treat mood disorders. Mood stabilizers with conventional and atypical antipsychotics are the most commonly recommended combination of medications for manic episodes. These rare antipsychotics work by blocking lower concentrations of dopamine receptors.(4)

Because they are efficient and have fewer extrapyramidal effects than first-generation antipsychotics, atypical antipsychotics are currently the first-line treatment for patients with mood disorders. However, they can have significant side effects, including metabolic side effects, such as central adiposity and weight gain (Stahl, 2013). According to a study of patients receiving atypical antipsychotics, this weight gain began during the first week of treatment and averaged 0.6 kg per week (Huang TL, 2007). Obesity and weight gain may make it difficult for patients to stick with their treatment.(5)

METHOD

Writer using a descriptive research design with a cross-sectional method sectional. This study aims to analyze the Effect of Atypical Antipsychotic Administration on Weight Changes in Mood Disorder Patients at the Dadi Regional Special Hospital, South Sulawesi Province. The study was conducted for 1 month, starting from July 26 to August 26, 2024. With the population selected by the researcher, namely mood disorder patients who underwent inpatient and outpatient care at the Dadi Regional Special Hospital, South Sulawesi Province, the next sample selected was 27 samples. Selected based on *Purposive Sampling*, namely selecting patients based on inclusion and exclusion criteria that have been calculated and determined. The following is the sample calculation used:

$$n = n1 = n2 = \frac{(Z\alpha + Z\beta) S}{X1 - X2}$$

Information :

Z α : Deviat alpha book :1.64

Z β : Deviat beta book : 1.28

S : Standard deviation: 35

X1-X2 : Minimum average difference : 20, n1 = n2 =

$$\frac{(1.64 + 1.28) 35}{(20)} = 26.11 \text{ (rounded to 27)}$$

RESULTS

Description of patient weight changes before and after 2 months of antipsychotic use

Table 1. Overview of weight changes in patients with mood disorders

Weight	N	Mean	Std. Deviation	Std. Error	Mean
Before Treatment	30	64.20	10.60	1.93599	
1 Month After Treatment	30	65.00	10.56	1.92861	
2 Months After Treatment	30	66.60	10.54	1.92539	

The results of the descriptive test conducted on the participants' body weight showed changes in average body weight before and after treatment. Before treatment, the average body weight of participants was 64.20 kg with a standard deviation of 10.60, which illustrates the level of variation in body weight among participants. After one month of treatment, there was an increase in average body weight to 65.00 kg with a standard deviation of 10.56, indicating a relatively stable change in body weight distribution.

Two months after treatment, the average body weight increased further to 66.60 kg with a standard deviation of 10.54, which also showed a slight decrease in variation between participants compared to baseline. This gradual increase indicates a significant impact of treatment on participants' body weight over a two-month period.

Identification of weight data of mood disorder patients after using antipsychotics for 2 months

Table 2. Identification of weight data for mood disorder patients

Weight	N	<i>p-value</i>
Before Treatment	30	0.483
1 Month After Treatment	30	0.349
2 Months After Treatment	30	0.453

Normality test using Saphiro-Wilk data on participant weight showed that the data distribution for all groups was normal. This is indicated by the significance value (Sig) which is greater than 0.05 in each observation period. Before treatment, the significance value was 0.483, indicating that the weight data followed a normal distribution. One month after treatment, the significance value of 0.349 also indicated a normal data distribution.

Similarly, two months after treatment, a significance value of 0.453 indicates that the weight data during this period remained normally distributed. This result confirm that assumption normality fulfilled on the third the data group.

Group Variance Analysis

Table 3. Group Variance Analysis

F	df1	df2	<i>p-value</i>
0.004	2	87	0.996

The results of the data homogeneity test show that the data variance between observation groups is homogeneous. This is based on the significance value (Sig) of 0.996, which is much greater than 0.05. The F value of 0.004 with degrees of freedom (df1) 2 and

(df2) 87 supports the conclusion that the variance between data groups before treatment, one month after treatment, and two months after treatment is not significantly different. Thus, the assumption of homogeneity of variance is met, which means that the data variance in the three groups can be considered similar.

The relationship between atypical antipsychotic administration and weight changes

Table 4. Relationship between atypical antipsychotic administration and weight changes

Weight	N	Average	Difference	Std. Error	MeanIK95%	<i>p-value</i>
Before	30	64.20	0.80	0.25997	0.268-1.332	0.005
After 1 Month	30	65.00				
Before	30	64.20				
After 2 Months	30	66.60	2.40	0.27376	1,840-2,959	0,000

The results of the *paired t-test* showed a significant difference in the weight of participants before and after treatment. In the comparison between weight before treatment (average 64.20 kg) and one month after treatment (average 65.00 kg), a significance value of 0.005 was obtained.

This value is less than 0.05, so it can be concluded that there is a significant increase in body weight after one month of treatment. Furthermore, the comparison of body weight before treatment (average 64.20 kg) and two months after treatment (average 66.60 kg) shows a significance value of 0.000. This value is also less than 0.05, indicating a very significant increase in body weight after two months of treatment. Overall, the results of this *paired t-test* indicate that the treatment has an impact significant to improvement participant weight in period one and two months

Average change patient weight after consume antipsychotic atypical for 2 months

Table 4. Average change weight in patients mood disorder

Weight	N	Mean (SB)	<i>p-value</i>
Before Treatment	30	64.20(10.60)	
1 Month After Treatment	30	65.00(10.56)	0.671
2 Months After Treatment	30	66.60(10.54)	

If the Sig value > 0.05 then there is no significant difference in the average body weight before treatment, one month of treatment, and two months of treatment. Based on The table above uses the repeated measure anova test known *Sig* is 0.671 more big from 0.05, which means that average difference between group No significant in a way statistics However happen improvement significant weight gain. This is show that although there is increase in average body weight on observation after treatment, differences This No Enough significant For concluded in a way statistics as difference real among group.

Discussion

Based on results study obtained patient as many as 30 people underwent it take care hospitalization and care road at Dadi Regional Special Hospital, South Sulawesi Province.

There were 19 men and 11 women. The most common type of antipsychotic used is risperidone, risperidone is antipsychotic derivative benzisoxazole. Affinity the biggest is on serotonin 5-HT₂, histamine H₁, α 1-adrenergic, and dopamine D₂ sites. Risperidone is significant effective in reduce severity symptom psychotic in a way overall. Risperidone has effect side extrapyramidal more light compared to with antipsychotic typical others. (21)

Subjective results improvement weight for patient with mood disorder that accepts treatment atypical and standard almost the same, respectively 60.0 % and 59.6%. The findings study This consistent with analysis systematically by Manu P., who discovered that 40-62% of patients with increased mood disorders weight or experience obesity after consume antipsychotic atypical, especially olanzapine and clozapine drugs. (23)

With block receptor Dopamine D₂, drug antipsychotic general can also cause addition weight, according to analysis systematically carried out researcher others, Richard Holt. Hyperprolactinemia caused by inhibition of receptor This can cause improvement fat deposits and disorders insulin sensitivity. Treatment with antipsychotics, in particular antipsychotic atypical, often causing addition weight. According to study previously carried out by Syamsuddin, the increase Body weight is indicated for the given individual drug antipsychotic with dose certain. For two to four Sunday monitoring, occurs various improvement body weight. (23)

Based on research that has been done there is increase significant weight gain after use antipsychotics for 2 months. Antipsychotics atypical functioning with block receptor dopamine D₂ and serotonin 5-HT_{2A} (as well as receptor α adrenoceptors). Another name for drug This is SDA is abbreviation from serotonin dopamine antagonist. (21). Through inhibition 5-HT_{2A} and 5-HT_{2C} receptors, antipsychotics atypical can cause change weight and changes metabolism. In the study comprehensive, Richard Holt, researcher others, stated that drug antipsychotic general can also cause addition weight due to block receptor dopamine. (21)

Inhibition receptor This can cause improvement fat deposits, hyperprolactinemia, and decreased insulin sensitivity. Increase weight is often a effect side drug antipsychotics, and especially caused by antipsychotics atypical. Patients who regularly consume drug antipsychotic show improvement severity body, according to study Syamsuddin previously. During period monitoring two to four week, happened improvement real weight.. (21)

Addition body weight and insulin resistance are also influenced by several factors neurotransmitters, including histamine, acetylcholine, dopamine, and serotonin. In addition, variations degrees affinity drug between antipsychotics and receptors on the serotonergic, dopaminergic, cholinergic, histaminergic and other neurotransmitter systems contribute to improvement body weight. (21) However, the results This Not yet Can confirmed the reason in a way neurochemical. While this, a statement that supports is antagonist 5-HT_{2A} receptors can in a way specific repair symptom negative and cognitive in patients psychiatry. (22)

5-HT_{2A} receptor is present located in the post- synaptic and spread in parts brain. When apsychotic atypical stick to one of the atypical drugs own effect side addition besides benefit own various receptor antipsychotics, risks addition very high body weight Because 5-

HT2C receptors can increase hunger and presence connection strong blocking with H1 receptor. In some report activity This can cause risk the occurrence of diabetes, dyslipidemia and other metabolic effects. (22)

CONCLUSION

According to findings research, shows that use antipsychotic atypical can cause improvement weight in patients mood disorders. The results show significant difference between weight before and after treatment, which indicates the need monitoring weight during therapy. Administration therapy antipsychotic atypical for 1 month show significant changes in measurement patient weight with mood disorders average 0.5 kg – 2 kg. Administration therapy antipsychotic atypical for 2 months show significant changes in measurement patient weight with Mood disorders average 2 kg – 5 kg. Based on conclusion above, the author recommend For give education to patients and families about potential effect side antipsychotic atypical, including risk increase weight. Information This can help patient For more aware and proactive in guard pattern eating and activities physique.

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