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RESEARCH ARTICLE

Quality of Life of Hypertensive Patients with Candesartan and Candesartan-Amlodipine Combination Therapy at a Governmental Hospital in Yogyakarta, Indonesia

Faridah Baroroh*, Andriana Sari, Riviana Nur Halifah

Faculty of Pharmacy, Ahmad Dahlan University, Yogyakarta, Indonesia.

***Corresponding Author: Faridah Baroroh**

Abstract

Many types of antihypertensive drugs produce different efficacies, and their use in therapy is often associated with unpleasant side effects that diminish the quality of life. This prospective cohort study intended to compare the impacts of two different treatments, namely candesartan and the combination of candesartan and amlodipine, on the quality of life of hypertensive outpatients at a government hospital in Yogyakarta, Indonesia. Starting with preliminary data survey, the analysis continued to measuring the quality of life of 100 respondents, which had met the inclusion and exclusion criteria, after three months of therapy. In the EQ5D questionnaire on quality of life, the EQ5D dimension was converted to EQ5D Index. The data analysis involved chi-square and correlation tests. The EQ-5D index ranged from 0.540 to 0.933 with an average of 0.819. Based on gender and complications, the quality of life of the patients who underwent candesartan therapy was not significantly different from those who took candesartan and amlodipine ($p > 0.05$). Meanwhile, based on age, occupation, income, and education, a significant difference was detected ($p < 0.05$). The quality of life significantly correlated with age, employment, income, and education ($p < 0.05$) but insignificantly with gender and complications ($p > 0.05$). As a conclusion, candesartan and candesartan-amlodipine therapies do not affect the quality of life of the patients differently, and the type of treatment is a factor that does not significantly affect the quality of life of the patients (RR; 95% CI = 1.135; 0.812-1.587).

Keywords: *Quality of life, Candesartan, Candesartan-Amlodipine, Hypertension, Outpatient.*

Introduction

Quality of life of patients has been attributed to depression, family support, gender, education level, marital status, occupation, income, and clinical stage of the disease ($p<0.05$) [1].It is likely to decrease due to the discomforting side effects associated with antihypertensive drugs [2].The correlation between hypertension and low quality of life has been estimated as the results of hypertensive complications [3].

Individuals who suffer from hypertension have a lower quality of life than those who have normal blood pressure [4, 5]. The quality of life of routinely treated hypertensive patients is better than those who are not [6]. This study aimed to determine the quality of life of patients undergoing candesartan therapy compared to that of hypertensive outpatients taking the combination of candesartan and amlodipine at a government hospital in Yogyakarta, Indonesia.

Methods

This study has obtained an ethical research approval No. 011802023 from the ethics research committee of Ahmad Dahlan University. All patients involved in this study had signed an informed consent form, and the study was conducted per the guidelines of Good Clinical Practice. The research design was a prospective cohort of hypertensive patients who underwent different therapies, namely candesartan and the combination of candesartan and amlodipine.

It started with preliminary data survey and continued to the measurement of the outcome, i.e., quality of life, after three months of therapy. Of the 150 patients in the

initial survey, 100 met the predefined inclusion criteria. The research subjects were all patients at a government hospital in Yogyakarta, Indonesia, who had hypertension with or without complications, received outpatient treatments with candesartan or candesartan-amlodipine, and met the inclusion criteria. These criteria were ICD-I10 hypertensive patients who had received at least three months of outpatient treatments with the same medicine.

The data on quality of life was analyzed by scoring the EQ5D questionnaire items and followed by conversion of the EQ5D dimension to EQ5D Index with the Malaysian value set. It was processed statistically by univariate analysis (descriptive) and bivariate analysis using the chi-square and correlation tests.

Results

This study involved 100 respondents who fulfilled the inclusion and exclusion criteria. More than half of them were female (61%), at the age of ≥60 years old (57%), and unemployed (53%) and had high income (66%) and medium to high education level (62%). Most of them were hypertensive patients with complications (77%), and the most common complication of the disease was Diabetes Mellitus (60.34%). Based on the scoring of the EQ5D questionnaires, the quality of life of hypertensive patients is presented in Table 1.

Table 1: Quality of life of hypertensive patients based on the EQ-5D dimensions

EQ-5D Dimensions	Value (%)		
	1 (No problems)	2 (Moderate Problems)	3 (Extreme Problems)
Mobility	64	36	-
Self-care	99	1	-
Usual activities	83	17	-
Pain or discomfort	33	67	-
Anxiety or depression	69	30	1

The quality of life of hypertensive outpatients was represented by EQ-5D Index, which, in this study, varied from 0.540 (lowest quality of life) to 0.933 (highest quality of life) with an average of 0.819. Based on the characteristics of the respondents, the quality of life is presented in Table 2.

Table 2: Different qualities of life by patients' characteristics

Patients' Characteristics		Number of Patients (%)	*p*-values
Sex	Male	39	0.237
	Female	61	
Age	<60 years old	44	0.000
	≥60 years old	56	
Employment status	Unemployed	53	0.000
	Employed	47	
Income	Low	34	0.001
	High	66	
Education	Low	38	0.001
	Medium to high	62	
Complications	Yes	77	0.512
	No	23	
Therapy	Candesartan	35	0.979
	Candesartan-Amlodipine	65	

The analysis results of the correlation between patients' characteristics (sex, age, employment status, income, education, and disease complications), type of therapy, and the quality of life of hypertensive outpatients are summarized in Table 3.

Table 3: The correlation between patients' characteristics, therapy, and quality of life

Patients' Characteristics		Quality of Life (n)		Coefficient of Correlation (r)	*p*-value
		Poor	Good		
Sex	Male	25	14	0.098	0.323
	Female	33	28		
Age	<60 years old	9	35	0.559	0.000
	≥60 years old	49	7		
Employment status	Unemployed	45	8	0.579	0.000
	Employed	13	34		
Income	Low	26	8	0.269	0.007
	High	32	34		
Education	Low	28	10	0.249	0.013
	Medium to high	30	32		

Complications	Yes	46	31	0.064	0.519
	No	12	11		
Therapy	Candesartan	22	13	0.072	0.470
	Candesartan-Amlodipine	36	29		

The analysis results of factors assumed to affect the quality of life of hypertensive outpatients are listed in Table 4.

Table 4: Factors predicted to affect the quality of life

Factors		Quality of Life (n)		*p*-value	RR (95%CI)
		Poor	Good		
Sex	Male	25	14	0.218	1.185 (0.852-1.647)
	Female	33	28		
Age	<60 years old	9	35	0.000	0.364 (0.233-0.567)
	≥60 years old	49	7		
Employment status	Unemployed	45	8	0.000	3.070 (1.907-4.941)
	Employed	13	34		
Income	Low	26	8	0.006	1.577 (1.156-2.152)
	High	32	34		
Education	Low	28	10	0.011	1.532 (1.106-2.096)
	Medium to high	30	32		
Complications	Yes	46	31	0.341	1.145 (0.743-1.764)
	No	12	11		
Therapy	Candesartan	22	13	0.306	1.135 (0.812-1.587)
	Candesartan-Amlodipine	36	29		

Discussion

The results showed that among the five dimensions, the most problem faced by hypertensive outpatients was pain/discomfort (67%). This finding is in line with [3, 7, 8], which claim that the physical dimensions are the link between hypertension and reduced quality of life. Meanwhile, the least problematic domain was self-care (1%).

As stated in [7], only 7.5% of patients have self-care problems because the majority of patients can still dress and bathe by themselves. The results of the difference test (Table 2) revealed that the qualities of life did not differ significantly ($p > 0.05$) between the male and female patients, patients with and without complications, and patients treated with candesartan and candesartan-amlodipine.

This finding is similar to [2], which argues that the qualities of life of patients undergoing monotherapy and combination treatment are not significantly different.On the contrary, the qualities of life differed significantly ($p<0.05$) between patients aged <60 years and ≥60 years, employed and unemployed patients, low- and high-income patients, and patients with low and medium-to-high education level.

Studies in Palestine and Sri Lanka have found that socially and economically disadvantaged populations have lower HRQoL [9, 10].There is no significant correlation ($p > 0.05$) between sex differences, complications, type of therapy, and quality of life (Table 3), which is contrary to the results of [1]. As for age, employment, income, and education, these factors are not significantly related to the quality of life of hypertensive outpatients ($p < 0.05$). According to the coefficient of correlation, age and employment have a strong correlation, which is in line with research in Japan [11]. Meanwhile, educational attainment and income have, respectively, moderate and weak relationship with quality of life.

The decreasing EQ5D index means that the quality of life worsens because of the severity of the problems faced by hypertensive patients on the five domains. Hypertension has been long associated with declining quality of life, or in other words, people with hypertension have a lower quality of life than those who do not suffer from this condition. This correlation is assumed to be the results of the complications of hypertension [3].

Changes in the patient's HRQoL may have been affected by successful blood pressure control, the number of drugs administered concurrently, and the strength of the last dose of antihypertensive medications used by the patients [12]. Individuals with hypertension experience symptoms like headache, depression, anxiety, and fatigue, which can affect their quality of life in

various dimensions, especially the physical ones [13]. Mental health is not affected by hypertension [14]. With or without complications, hypertension can directly interfere with the life of the patient [15]. Age, employment, income, and education level are believed to significantly affect the quality of life of hypertensive outpatients at a government hospital in Yogyakarta.

The quality of life of unemployed patients is potentially three times lower than the employed ones (RR; 95% CI = 3.070; 1,907-4,941).Research in Nepal shows that age, income, and comorbidity are factors that influence the quality of life of hypertensive patients [16, 17].

Conclusion

The quality of life of patients treated with candesartan is not different from those undergoing candesartan-amlodipine combination therapies. There is no correlation between the type of therapy and quality of life, and the type of therapy is one factor that does not significantly affect the quality of life of patients (RR; 95% CI= 1.135; - 1.587).

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