

EVALUATION OF ANTIHYPERTENSION MEDICINE USED IN PATIENTS OF PKU MUHAMMADIYAH HOSPITAL YOGYAKARTA JANUARY – MEI 2011 PERIOD

Semivientri¹, Woro Supadmi²

^{1,2} Faculty of Pharmacy, Ahmad Dahlan Yogyakarta

Abstract

Background. Hypertension is a common disease in community, this was due to hypertensive disease in Indonesia and other countries have a fairly high incidence. The inappropriate treatment of hypertension can lead to complications. This study aimed to determine the use of antihypertensive medicine in hypertensive patients and to find out the suitability of antihypertension medicine based according to the standards

Method. This study used retrospective descriptive design using medical records describe the evaluation of antihypertensive medicine in general hospital inpatient installation of PKU Muhammadiyah Yogyakarta January - May 2011 period. The JNC VII and Drug Information Handbook were used as the standard for evaluating the drug indication and dose accuracy, respectively

Result. The results showed that the number of female patients by sex was 29 patients (63.04%) and 17 of male patients (36.96%). The use of drugs in hypertensive patients without complications according to JNC VII was 63.04% and the cases with complications of hypertension were 36.96%. The drug dosing in patients with uncomplicated hypertension which was appropriate based on the Drug Information Handbook was 60.87%. However was not appropriate was 2.17%, with complications of hypertension cases in accordance is 36.96%.

Keywords : Evaluation, Antihypertension Medicine, Inpatient

INTRODUCTION

In the developed countries hypertension is a medical problem that requires a good response. This caused the high mortality and morbidity. Indonesia has not have the accurate data to describe the prevalence of hypertension. Data taken from The National Health and Nutrition Examination Survey (NHANES) showed that since 1999 until 2000, the incidence of hypertension in adults are approximately 29-31%, it means that there are 58-65 million people with hypertension in the United State, and there are some increase of 15 million NHANES data to 1988 to 1991. Cardiovascular is the leading cause of death in Indonesia, according to the Household Health Survey (SKRT) 1992 and 1995. (Sidabutar and Wigono, 1996)

Hypertension is one of chronic diseases caused by disorders of blood circulation system to a major public of health problems. It has showed that the prevalence of hypertension with a blood pressure of 160/90mmHg for a men in 1998 was 13.6%, 16.5% in 1993 and in 2000 by 12.2%. Beside that the prevalence in 1998 reached 16%, 1% in 1993 and 2000 by 12.2% in female population. Furthermore hypertension is the most a disease often leads to heart failure in the society and the only one risk factor for atherosclerosis. (Underwood, 1999).

Hypertension is needed serious treatment in the therapy. Usually, it is a lifelong disease that only a few symptoms until the next stage. Around 15% of arterial blood pressures of American adults are increased with the need of some treatment. The prevalence of hypertension is varied by age, race, education, and the other variables. The prolonged arterial of hypertension will damage the blood vessels, kidneys, heart, and brain and also can increase the incidence of renal failure, coronary disease and stroke (Guyton, Arthur, C. 1997).

This study aimed to determine the use of antihypertensive medicine in hypertensive patients and to find out the suitability of antihypertensive drugs based according to the standards.

1. Knowing the pattern of use antihypertensive drug in hypertensive patients in the Installation of PKU Muhammadiyah Hospital Inpatient period January until May 2011
2. Knowing the suitability of use antihypertensive drug based on JNC VII, 2004
3. Knowing the suitability of antihypertensive drug dosage based on *Drug Information Of Handbook*

METHODS

This research used a descriptive design with retrospective data collection.

- a. Data which were included in this study were drug found in the therapy of hypertension, the percentage of patients who undergo hypertension therapy, the percentage of type of drug used, the percentage of patients based on patient of age, gender, diagnosis of disease, the degree of hypertension and given to dosage suitability.
- b. The data were taken from medical records in patients who undergo hypertension therapy in inpatient installation of PKU Muhammadiyah Hospital of Yogyakarta period from January to May 2011. The complete data of patients medical record with diagnosis of hypertension, age more than 21 years old.

The research was analyzed with descriptive methods to determine the pattern of use of antihypertensive drug with the characteristics of the subjects based on the degree of hypertension and its complications.

More analysis are the selection of antihypertensive and antihypertensive of drug dosage and then adjusted with a standard therapy used in JNC VII (2004) and the *Drug Information Handbook*

RESULT AND DISCUSSION

The results showed that the number of female patients by sex was 29 patients (63.04%) and 17 of male patients (36.96%). The use of drugs in hypertensive patients without complications according to JNC VII was 63.04% and the cases with complications of hypertension were 36.96%. The drug dosing in patients with uncomplicated hypertension which was appropriate based on the Drug Information Handbook was 60.87%. However was not appropriate was 2.17%, with complications of hypertension cases in accordance is 36.96%.

This study showed that 29 female patients (63.04%) and 17 male patients (36.96%). It was showed the number of patients with hypertension in PKU Muhammadiyah Hospital most occur to the women. The prevalence of hypertension was occurred in a men and women, but the female population are protected from cardiovascular disease before the menopause. The premenopausal women are protected by the oestrogen hormone in increasing levels of high density lipoprotein (HDL). High HDL levels are protective factor in preventing the occurrence of the atherosclerotic process.

This study also showed that most of the patients were 41 to 60 years old with the total 28 patients (60.87%) who were mostly women. Hypertension is a multi factorial disease which is happened because the interaction of various factor. If the age increase, the blood pressure will also increase. After 45 years old, the thickening of the artery wall will be presented because of the development of collagen in the muscle layer, so that blood vessels will gradually narrower and becomes rigid. The increase of systolic blood pressure because of the flexibility of blood vessels could reduced on the addition of age until the seventh decade, while the diastolic blood pressure will increase until the fifth and sixth decades later settled or likely to decline. The increase of age will lead to some physiological changes, such as the increase of peripheral resistance and sympathetic

activity. Table V, shows the increase in blood pressure at about 40's and about 60's years old.

We have 23 patients (50%) with level II uncomplicated hypertension. Based on the result of the study, diabetes was the most common complication disease in hypertension patients (58.82%). The number of hypertensive patients with stroke were 6 patients (35.30%), and 1 patients with atherosclerosis (5.88%)

The relationship between hypertension and diabetes mellitus are very strong case because of several criteria that are often occurred in patient's hypertension with increase in blood pressure, obesity, dyslipidemia and increased blood glucose. Hypertension is major risk factor for cardiovascular disease and microvascular complication such as nephropathy and renopati. The data indicated that at least 60-60 % of individuals with diabetes have occurred hypertension. The main reason people with diabetes hypertension are the hardening of the arteries (Chobanian, A. V, Bakris.G. L, Black.H,R, Green, L,A, dan Joseph,L,L.2004).

Most medicine prescribed were combination of captopri- nifedipin(13.04%) whether giving the medicine that given to the patient with hypertension stage II. The choice of medicine for each patient were depend on, 1) metabolic side effects and patient subjectives, 2) the presence of the other diseases that might be improved or worst by antihypertensives, 3) using of the other medicine that may interact with a given to antihypertension, 4) the evidence that may decrease morbidity and mortality, 5) the cost of treatment which include it not only about the price of medicine that used, but also the cost of routine laboratory tests and cost of additional therapy is needed on the using of certain antihypertensive.

Most patient with hypertension disease needed two or more antihypertension to achieve blood pressure that what they want (Benowitz,N,L. 2001). The additional of a second drug from a different class begins when a single drug at a dosage commonly fail to achieve blood pressure aims. The antihypertension with

a different mechanism action are given a lower dosage as to reduce the side effect. The use of 4 combinations in hypertensive patients without complications could lead to adverse drug reaction, such as the decline of blood pressure.

The choice of medicine depends on high blood pressure and the presence of specific indications. Most of stage I hypertension should be the first treated by diuretics thiazid. However, in the the stage II higher blood pressure , the combination of medicine, one of thiazid type diuretics are suggested (Chobanian, A. V, Bakris.G. L, Black.H,R, Green, L,A, dan Joseph,L,L.2004).

According to the JNC VIII, the use of medicine in hypertensive patients without complication were appropriate in 29 patients (63.04%) and cases of hypertension with complications according to the 17 patients (36.96%). This finding showed the use of antihypertensive medicine in PKU Muhammadiyah Hospital were appropriate..

Drug Information Handbook, the appropriate use of medicine in hypertensive patients without complication was reached in 28 patients (60.87%), and in 1 patients (2.17%) was not appropriate. While the cases of hypertension with complications were 17 patients (36.96%). This showed that the antihypertensive dosage administered to a patient hypertension's that undergo hospitalization in PKU Muhammadiyah Hospital of Yogyakarta have been appropriated with the standard at *Drug Information Handbook*.

The weakness of this research is retrospectiv method so that it cannot be known the condition of the patient . This research result can be used as an advance research about the effectiveness of medicine .

CONCLUSION

Most of the patients found in this study were female patients (63.04%) . There were 12 stage I of hypertensive patients and 4 stage II hypertensive patients.

Around 63.04% antihypertension medicine were appropriate according to the JNC VII in uncomplicated hypertension patients and 36.69% were appropriate in complicated patients.

REFERENCES

- Anonim.2000. *Informatorium Obat Nasional Indonesia*, diterjemahkan oleh Darmansyah,I,Setiawan,A,Bustam,Z,S.1 85.Depkes RI dan Direktorat Jendral Pengawasan Obat dan Makanan. Jakarta
- Anonim. 2009. *Diabetes mellitus*. <http://diabetesmellitus@wikipedia.org> . accessed on 5 Januari 2012
- Arikunto,S. 2006. *Prosedur Penelitian Suatu Pendekatan Praktik*. Rineka cipta. Jakarta
- Asriyanti,R. 2006. Profil penggunaan obat pada pasien hipertensi di instalasi rawat inap RS DR. Sardjito Yogyakarta tahun 2004. *Skripsi*. Fakultas farmasi Universitas Ahmad Dahlan Yogyakarta
- Benowitz,N,L. 2001. *Obat Antihipertensi* dalam Katzung,B. *Farmakologi dasar dan Klinik*.edisi I. Salemba Medika. Jakarta
- Chobanian, A. V, Bakris.G. L, Black.H,R, Green, L,A, dan Joseph,L,L.2004. *The Seventh Report Of National Committee VII on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure*. [http://www.jama-ama-assn.org/cgi/content/full.289.19.256](http://www.jama-ama-assn.org/cgi/content/full/289.19.256) Vi, accessed on 5 Maret 2011.
- Guyton, Arthur,C. 1997. *Buku Ajar Fisiologi Kedokteran*, edisi 9. EGC. Jakarta
- Junaidi, I. 2010. *Hipertensi Seri Kesehatan Populer*. PT Bhuana Ilmu Populer. Jakarta
- Katzung, B.G. 1995. *Farmakologi Dasar dan Klinik*, Edisi VI. Kedokteran EGC. Jakarta
- Katzung, Betram, G. 1997. Obat Antihipertensi dalam *Farmakologi Dasar dan Klinik*. Edisi VI. Kedokteran EGC. Jakarta. Hal 158 dan 178.

- Lacy, C.F, Armstrong L.L, Goldman,M.P, Lance L.L, 2009. *Drug Information Handbook*. Edisi 8. Lexi-comp Inc
- Mahdiana, R. 2010. *Mencegah Penyakit kronis Sejak Dini*. Tora Book. Yogyakarta
- Nafrialdi. 2007. *Antihipertensi dalam Sulistia dan Gunawan (Editor), Farmakologi dan Terapi*, Edisi V. Bagian Farmakologi Fakultas Kedokteran Universitas Indonesia. Jakarta
- Priyanto, 2008. *Farmakoterapi dan Terminologi Medis*. Leskonfi. Jakarta.
- Rahardjo, J,P. 2001. *Penatalaksanaan Hipertensi Terkini*, <http://www.interna.fk.ui.ac/artkel/current2001/cdt01.25.htm>
- Santoso.1996. *Penggunaan Obat yang Rasional di Tempat pelayanan Kesehatan*.
- Sastramihardja, S. 1997. Penggunaan obat yang rasional ditempat pelayanan kesehatan. *Majalah kesehatan Indonesia*. Jakarta
- Setiawati, A, dan Bustami, Z,S.1995. *Antihipertensi dalam Ganiswara S.G (Editor), Farmakologi Dan Terapi*. Edisi IV, Bagian Fakultas Kedokteran Universitas Indonesia. Jakarta. Hal 315 – 342.
- Sidabutar dan Wigono, 1996. *Hipertensi Essensial dalam Suparman, dan Waspadji, S. Ilmu Penyakit Dalam*, jilid II. Balai penerbit FKUI. Jakarta
- Sugiyono. 2010. *Metode Penelitian Pendidikan*. Alfabeta. Bandung
- Tjay,H,T, dan Rahardja, K. 2002. *Obat – Obat Penting*. Penerbit Gramedia. Jakarta
- Underwood, J,C,E. 1999. *Patologi Umum Dan Sistemik*, edisi II. EGC. Jakarta

