

Conference Paper

Analysis of Antihypertensive Drug Use in Pregnancy

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ABSTRACT

The management of hypertension in pregnancy therapy aims to control the patient's blood pressure to the extent that it does not interfere with or damage other organ or physiological functions, reducing the risk of morbidity and mortality. The drugs used must be safe, effective and rational to achieve the desired therapy based on the high blood pressure experienced. The aim of this study was to analyze the use of antihypertensives in inpatient pregnancy at the Arifin Achmad Hospital, Riau Province, whether it was in accordance with the guidelines. The research method used a cross sectional study, data were taken using medical records and samples were taken by total sampling. Data taken from January 2019 to December 2021. The analysis was carried out descriptively. The results showed that out of 176 hypertensive patients in pregnancy, most were in the age group of 21-35 years. The most common diagnosis was preeclampsia 90.9%. The most widely used antihypertensive by patients was a combination of Nifedipine and Methyldopa (64%). Most of the use of antihypertensive is in accordance with the guidelines (89.8%). In general, the use of antihypertensives in inpatient pregnancy at Arifin Achmad Hospital is in accordance with the guidelines. Proper management of hypertension will reduce morbidity and mortality.

Keywords: Drug use, hypertension, pregnancy

Introduction

Hypertensive disorders of pregnancy are diagnosed by the criteria of a systolic blood pressure of 140 mm Hg or more and/or a diastolic blood pressure of 90 mm Hg or more on at least two occasions over 4 hours of rest. Approximately 2% of women experience chronic hypertension in pregnancy. Antihypertensive drugs are routinely used in pregnancy to reduce progression so as not to develop severe hypertension (systolic blood pressure ≥ 160 mmHg). The goal of this study was to analyze the use of antihypertensives in inpatient pregnancy at the Arifin Achmad Hospital, Riau Province, whether it was in accordance with the guidelines.

Material and Methods

The research method used a cross sectional study, data were taken using medical records and samples were taken by total sampling. Data taken from January 2019 to December 2021. The analysis was carried out descriptively. This research has received ethical approval by the Research Ethics Committee of the Faculty of Medicine, University of Riau.

Results and Discussion

The results of the study from 176 sample showed that 60,2 % were aged 21-35 years old. Based on gestational age data, 50% were in 28-35 weeks gestation. The majority of diagnoses

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classification were 90,9% preeclampsia, 6,3 % followed by eclampsia, 1.1% chronic hypertension superimposed preeclampsia, 1.1% unclassified antenatal hypertension, and 0,6% pre-existing hypertension. The proportion of the longest length of stay in hospital were 4-6 days (36,4%). The proportion of HELPP syndrome was 14.8%. The number of hospitalized hypertension patients in pregnancy who died was only 3.4% (Table 1).

Table 1. Characteristic hypertension patient in pregnancy

Characteristic	Frequency (n=176)	%
Age		
≤20 years old	5	2,8
21-35 years old	106	60,2
>35 years old	65	37
Clasification Hipertension in Pregnancy		
Preeclampsia	160	90,9
Eclampsia	11	6,3
Chronic hypertension superimposed preeclampsia	2	1,1
Unclassified antenatal hypertension	2	1,1
Pre-existing hypertension	1	0,6
Length of Stay in Hospital		
1-3 Days	52	29,5
4-6 Days	64	36,4
≥7 Days	17	7,4
HELLP Syndrome		
Yes	26	14,8
No	150	85,2
Patient Die		
Yes	6	3,4
No	170	96,6

The most frequently used antihypertensive were combination methyldopa with nifedipine (64%) (Table 2).

Table 2. Distribution antihypertensive drug use in pregnancy

Drug	Frequency (n=176)	%
Metildopa	52	29,5
Nifedipine	23	13,1
Candesartan	1	0,6
Nifedipine + Metildopa	81	64
Candesartan + Metildopa	1	0,6
No Use	18	10,2

Most of the selection of antihypertensives complied with the guidelines (89.8%) and 10.2% did not use antihypertensives as shown in Figure 1.

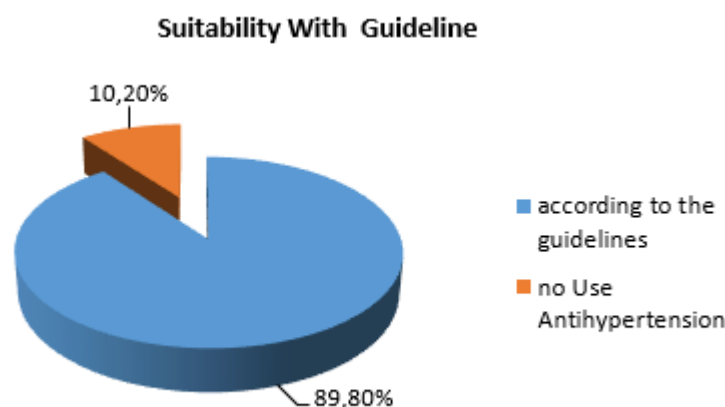


Figure 1. Suitability with guideline

The incidence of hypertension in pregnancy in this study was mostly in the age group of 21-35 years, this is possible. At the age of 21-35 years many have plans for pregnancy because at that age is the peak of fertility compared to those aged over 35. (Schlembach et al., 2015; Leal et al., 2020; Poudel et al., 2021).

In this study, the most widely used proportion of antihypertensives was a combination of nifedipine and methyldopa, this pattern was different from a study at Purwokerto Hospital in 2018 which showed that antihypertensives that were widely used in hypertension in pregnancy were nifedipine monotherapy (Muti et al., 2015; Andriana et al., 2018). Methyldopa is the first-line drug for hypertension in pregnancy because of evidence of its safety so far. But the most prominent of the chronic use of methyldopa is that it will cause sodium and water retention (ACOG.,2013; Indonesian Society of Hypertension, 2019). Nifedipine works by inhibiting the movement of calcium across cell membranes in cardiac and smooth muscle. This action causes vasodilation of the coronary arteries and peripheral arteries which causes a decrease in peripheral resistance resulting in a decrease in blood pressure (Scantlebury et al., 2013; PERKI, 2021). The European Society of Cardiology recommends methyldopa, labetalol and nifedipine as first-line drugs for hypertension in pregnancy (European Society of Cardiology., 2018; Rachel et al., 2020).

Conclusion

In general, the use of antihypertensives in inpatient pregnancy at Arifin Achmad Hospital is in accordance with the guidelines. Proper management of hypertension will reduce morbidity and mortality.

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