Predictors of the Use of Amlodipine Monotherapy as the First Line Agent in the Treatment of Ambulatory Preeclampsia

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BACKGROUND

- Preeclampsia contributes to the high rate of maternal mortality in Indonesia
- Amlodipine is frequently used as one of the first line agents to manage preeclampsia in an outpatient setting
- There have been some uncertainties around the efficacy and safety of amlodipine in preeclampsia.
- Relevant guidelines recommend to use long-acting nifedipine or methyldopa as the first line agent for pregnant women with hypertension (Panduan tatalaksana penyakit kardiovaskular pada kehamilan - PERKI, 2021)

OBJECTIVE

Our study aimed to investigate the predictors of the use of amlodipine as the first line agent for preeclampsia in an outpatient setting in Surabaya.

METHODS

- Study design : cross-sectional
- Data source : medical records of pregnant women
- Setting : an outpatient setting of a children and maternal hospital in Surabaya.
- Population : all pregnant women who were diagnosed with preeclampsia for the first time when visited the setting during 1st January to 31st December 2021.
- Predictors : baseline characteristics
- Outcomes : amlodipine *vs* nifedipine/methyldopa prescription
- Analysis : multivariate regression (IBM SPSS Statistics version 26.0)
- Measures : adjusted odds ratio (aOR) and 95% confidence intervals

RESULT

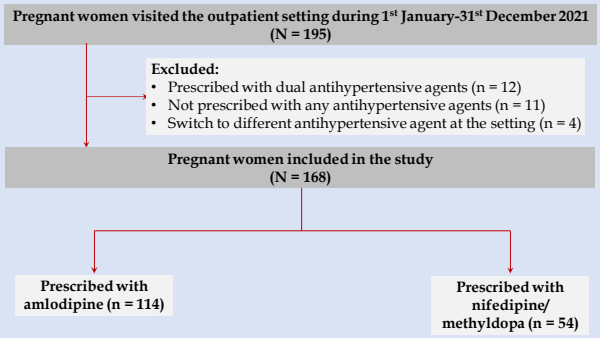

Figure 1. Selection of participants

Table 1. Baseline characteristics of pregnant women in the study

Baseline characteristics	Amlodipine (n = 114)	Nifedipine/ methyldopa (n = 54)	*p*-Value
	n (%)		
Mild preeclampsia	94 (82.5%)	31 (57.4%)	< 0,001
Pregnancy age ≥ 28 week	99 (86.8%)	40 (74,1%)	0.041
Number of parity ≥ 3	25 (21,9%)	19 (35,2%)	0.094
Preeclampsia history	6 (5,3%)	2 (3,7%)	0.658
History of miscarriage	20 (17,5%)	13 (24,1%)	0.320
	Median (minimum, maksimum)		
Age (years)	29.50 (18, 46)	32.5 (18, 41)	0.072
Systolic blood pressure (mmHg)	152.0 (140, 180)	158.0 (144, 198)	<0.001
Diastolic blood pressure (mmHg)	97.0 (73, 120)	100.0 (85, 120)	0.008
Body mass index (kg/m^2)	31 (23.0, 52.0)	32.0 (20.3, 71.0)	0.087

Table 2. Predictors of the use of amlodipine monotherapy as the first line antihypertensive agent for ambulatory preeclampsia

Predictors	Adjusted odds ratio (aOR), 95% CI	*p*-Value
Mild preeclampsia	0.50 (0.20-1.24)	0.136
Pregnancy age ≥ 28 week	1.00 (0.37-2.74)	0.993
Number of parity ≥ 3	0.50 (0.15-1.68)	0.263
Age (years)	0.99 (0.92-1.07)	0.833
Systolic blood pressure (mmHg)	**0.93 (0.89-0.98)**	**0.003***
Diastolic blood pressure (mmHg)	0.99 (0.94-1.05)	0.760
Body mass index (kg/m^2)	0.96 (0.91-1.03)	0.251

*statistically significant

For every one mmHg decrease in systolic blood pressure, a pregnant women with preeclampsia was ~93% as likely to be prescribed with amlodipine monotherapy.

Conclusion

Systolic blood pressure at baseline of pregnant women diagnosed with preeclampsia is the sole statistically significant predictor for the prescription of amlodipine as the first line antihypertensive agent. Studies to investigate the effectiveness and safety of amlodipine compared to other first line agents recommended by the guideline is needed.

Dipresentasikan pada Symposium ACSA 2023, Airlangga Cardiovascular International Conference V – Continuing Medical Education XXV – Surabaya Cardiology Update XIV. Shangri-La Hotel, Surabaya, 14-15 Oktober 2023

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