



## Drug Utilization Profile for Hypertension Management: Evidence from Selajambe Community Health Center, 2025

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### Abstract

**Background:** Hypertension remains a major cardiovascular risk factor in Indonesia. Evaluating antihypertensive prescribing in primary care can identify local utilization patterns and support medication-use review. **Objective:** To describe antihypertensive drug utilization by patient characteristics, treatment pattern, regimen, principal recorded dose, and dosing frequency at Selajambe Community Health Center, Kuningan Regency, in 2025. **Methods:** This retrospective descriptive observational study used a patient-level unit of analysis. From 230 eligible hypertensive patients, 146 records were selected using purposive sampling. Each patient contributed one index record, based on the most recent complete antihypertensive prescription documented in 2025. Data were summarized as frequencies and percentages. **Results:** Most patients were 60 years or older (56.16%) and female (71.92%). Monotherapy was recorded for 139 patients (95.21%), comprising amlodipine alone in 110 patients (75.34%) and captopril alone in 29 patients (19.86%); seven patients (4.79%) received amlodipine plus captopril. The principal recorded dose categories were amlodipine 5 mg (45.21%), amlodipine 10 mg (28.77%), and captopril 12.5 mg (26.03%). Once-daily dosing was recorded for 75.34% of patients. **Conclusion:** Antihypertensive utilization was dominated by monotherapy, particularly amlodipine. These findings describe local prescribing patterns but do not establish blood-pressure control, adherence, or clinical appropriateness.

**Keywords:** amlodipine; antihypertensive drugs; calcium channel blocker; drug utilization; hypertension; primary health care.

### INTRODUCTION

Hypertension is a major non-communicable disease because it contributes substantially to cardiovascular morbidity and mortality. Age, genetic predisposition, dietary factors, physical inactivity, stress, and the use of certain medicines can influence blood pressure. When inadequately managed, hypertension is associated with coronary heart disease, heart failure, stroke, and chronic kidney disease (Aditya & Mustofa, 2023).

The 2023 Indonesian Health Survey reported a measured hypertension prevalence of 30.8% among adults aged 18 years or older in Indonesia and 34.4% in West Java Province (Health Development Policy Agency, 2024). These findings emphasize the continuing need for evidence-based hypertension management and medication-use evaluation in primary health care.

Pharmacological treatment aims to reduce cardiovascular risk through appropriate blood-pressure management. The World Health Organization recommends thiazide or thiazide-like diuretics, angiotensin-converting enzyme inhibitors or angiotensin receptor blockers, and long-acting dihydropyridine calcium channel blockers as first-line drug classes for adults requiring treatment. The guideline also provides criteria for initial monotherapy or combination therapy based on the patient's clinical condition and blood-pressure level (World Health Organization, 2021).

Amlodipine and captopril are among the antihypertensive medicines commonly reported in Indonesian health-care studies. However, utilization data alone cannot determine whether an individual prescription is clinically appropriate because blood-pressure values, comorbidities, contraindications,

adverse effects, and treatment response must also be considered (Alaydrus & Toding, 2019; Khairiyah et al., 2022; Natasia et al., 2022; Pratiwi & Melvani, 2023).

In Kuningan Regency, administrative data indicated an increasing burden of hypertension in the Selajambe Community Health Center service area. The Kuningan Regency Health Office recorded an increase in reported hypertension cases in 2023 and documented 250 patients receiving antihypertensive therapy in 2024, with amlodipine and captopril among the medicines used (Kuningan Regency Health Office, 2024). These local data support the need to describe prescribing patterns in this primary-care setting.

Although antihypertensive utilization has been described in hospitals and several primary-care settings, published information from Selajambe Community Health Center remains limited. A patient-level description of demographic characteristics and prescribed regimens can provide baseline information for local pharmaceutical-service evaluation, while recognizing that utilization data do not measure clinical outcomes.

Therefore, this study aimed to describe antihypertensive drug utilization according to patient characteristics, treatment pattern, regimen, principal recorded dose, and dosing frequency at Selajambe Community Health Center, Kuningan Regency, in 2025.

## METHODS

This study used a descriptive, observational, non-experimental design with a retrospective quantitative approach. The source period comprised patient records and prescriptions from January to December 2025 at Selajambe Community Health Center, Kuningan Regency. Administrative preparation was conducted from October 2025 to April 2026, and formal record access and data extraction were undertaken after ethical approval was granted on July 3, 2026.

The study population consisted of 230 hypertensive outpatients who received at least one antihypertensive medicine during 2025. A target sample of 146 patients was calculated using the Slovin formula with a 5% margin of error. Purposive sampling was applied to the eligible-record list until the required sample was reached. Inclusion criteria were patients aged 19 years or older with a documented hypertension diagnosis and a complete antihypertensive prescription. Records with missing key study variables were excluded. Each patient was counted once; when repeat visits were present, the most recent complete antihypertensive prescription in 2025 was used as the index record.

The unit of analysis was the individual patient. Variables included age, sex, treatment pattern (monotherapy or combination therapy), antihypertensive regimen, principal recorded dose, and recorded dosing frequency. A researcher-developed observation form contained predefined fields for these variables and was checked for completeness and consistency before data extraction. For combination therapy, the regimen category recorded both active ingredients. The dose and frequency fields represented the principal antihypertensive entry in the patient-level extraction sheet rather than all component drug items.

Data were obtained from medical records and prescriptions. Eligible records were reviewed using the standardized observation form, coded without direct identifiers, and checked for duplicate patient entries. Frequencies and percentages were calculated using 146 patients as the denominator. Mutually exclusive categories were reconciled to total 146 patients, and percentages were reported to two decimal places.

## RESULTS

### Respondent Characteristics.

A total of 146 patients met the eligibility criteria and were included once in the patient-level analysis. Characteristics were summarized by age and sex.

**Table 1. Respondent Characteristics by Age and Sex**

| Variable    | Frequency (n) | Percentage (%) |
|-------------|---------------|----------------|
| <b>Age</b>  |               |                |
| 19-59 years | 64            | 43.84          |
| ≥60 years   | 82            | 56.16          |
| <b>Sex</b>  |               |                |
| Male        | 41            | 28.08          |
| Female      | 105           | 71.92          |

Most patients were 60 years or older (56.16%), and 105 of 146 patients were female (71.92%).

### Antihypertensive Drug Utilization.

Antihypertensive use was summarized by mutually exclusive treatment pattern and regimen categories. Principal recorded dose and dosing frequency were also summarized at the patient level.

**Table 2. Distribution of Antihypertensive Drug Use**

| Variable                                 | Frequency (n) | Percentage (%) |
|------------------------------------------|---------------|----------------|
| <b>Treatment pattern (N=146)</b>         |               |                |
| Monotherapy                              | 139           | 95.21          |
| Combination therapy                      | 7             | 4.79           |
| <b>Antihypertensive regimen (N=146)</b>  |               |                |
| Amlodipine monotherapy                   | 110           | 75.34          |
| Captopril monotherapy                    | 29            | 19.86          |
| Amlodipine + captopril                   | 7             | 4.79           |
| <b>Principal recorded dose (N=146)</b>   |               |                |
| Amlodipine 5 mg                          | 66            | 45.21          |
| Amlodipine 10 mg                         | 42            | 28.77          |
| Captopril 12.5 mg                        | 38            | 26.03          |
| <b>Recorded dosing frequency (N=146)</b> |               |                |
| Once daily                               | 110           | 75.34          |
| Twice daily                              | 36            | 24.66          |
| <b>Notes</b>                             |               |                |

1. The patient was the unit of analysis; each patient contributed one index record.
2. Treatment-pattern and regimen categories are mutually exclusive and sum to N=146.
3. Dose and frequency represent the principal antihypertensive entry recorded for each patient and do not count every component drug in combination regimens.

Monotherapy was recorded for 139 patients (95.21%), whereas seven patients (4.79%) received combination therapy. Amlodipine monotherapy was the most frequent regimen (75.34%), followed by captopril monotherapy (19.86%) and amlodipine plus captopril (4.79%). The principal recorded dose

categories were amlodipine 5 mg (45.21%), amlodipine 10 mg (28.77%), and captopril 12.5 mg (26.03%). Once-daily dosing was recorded in 110 patients (75.34%), and twice-daily dosing in 36 patients (24.66%).

## DISCUSSION

More than half of the patients were 60 years or older. This distribution is compatible with the well-established increase in hypertension risk with advancing age, although the present study did not evaluate age-specific causes, disease severity, or blood-pressure control. Therefore, the result should be interpreted as a description of the patients receiving therapy at this center rather than as an estimate of population prevalence.

Female patients represented 71.92% of the sample. Similar female predominance has been reported in another Indonesian antihypertensive-utilization study (Widyastuti et al., 2022). However, the current dataset did not include menopausal status, health-care-seeking behavior, or other factors that could explain the observed sex distribution.

Monotherapy was the predominant treatment pattern, accounting for 95.21% of patients after reconciliation of the treatment-pattern and regimen categories. This finding indicates that one antihypertensive medicine was recorded for most index prescriptions. It does not demonstrate that blood pressure was controlled or that monotherapy was clinically optimal, because blood-pressure measurements, cardiovascular risk, comorbidities, and prior treatment response were not analyzed. WHO guidance allows either monotherapy or combination therapy depending on clinical circumstances (World Health Organization, 2021).

Amlodipine monotherapy was the most frequently recorded regimen, followed by captopril monotherapy. Calcium channel blockers and angiotensin-converting enzyme inhibitors belong to drug classes used in hypertension management, and predominance of amlodipine has also been described in Indonesian health-care settings (Khairiyah et al., 2022; Natasia et al., 2022; Pratiwi & Melvani, 2023). Nevertheless, this study evaluated utilization rather than prescribing appropriateness; therefore, the regimen distribution should not be interpreted as proof of guideline concordance for individual patients.

Once-daily dosing was the most frequently recorded schedule. A less frequent regimen may be easier for some patients to follow, but adherence was not measured in this study. Likewise, the reported principal dose categories describe the extraction-sheet entries and were not evaluated against patient-specific clinical characteristics. No conclusion regarding dose appropriateness, safety, or therapeutic response can therefore be made from these data alone.

Overall, the study provides a local profile of antihypertensive utilization at Selajambe Community Health Center. The findings may support internal medication-use review and future studies that incorporate clinical outcomes, but they should not be used to infer treatment effectiveness or rationality at the individual-patient level.

This study has several limitations. It was conducted at a single community health center and used purposive sampling, which limits generalizability. The retrospective records did not provide a complete analysis of blood-pressure values, comorbidities, contraindications, adverse effects, adherence, treatment changes, or clinical response. In addition, dose and frequency were available only as one principal patient-level entry, so all component drug items in combination regimens could not be analyzed separately. These limitations should be considered when interpreting the results.

## CONCLUSION

Among 146 hypertensive patients treated at Selajambe Community Health Center in 2025, 56.16% were 60 years or older and 71.92% were female. Monotherapy accounted for 95.21% of treatment patterns, with amlodipine monotherapy recorded most frequently (75.34%), followed by

captopril monotherapy (19.86%); amlodipine plus captopril was recorded in 4.79%. Once-daily dosing was the most common recorded frequency. These findings describe local prescribing patterns and should not be interpreted as evidence of blood-pressure control, adherence, clinical appropriateness, or treatment effectiveness.

**Author Contributions:** RR contributed to conceptualization, methodology, investigation, data collection, data curation, formal analysis, visualization, and writing the original draft. YC contributed to conceptualization, methodology, supervision, validation, and manuscript review and editing. IR and RR contributed to supervision, validation, manuscript review and editing, and overall guidance throughout the research process. All authors participated in data interpretation, critically revised the manuscript for important intellectual content, approved the final version of the manuscript, and agreed to be accountable for all aspects of the work.

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**Ethical Approval Statement:** The study was approved by the Health Research Ethics Committee of Poltekkes Kemenkes Tasikmalaya (Approval No. DP.04.03/F.XVIII.1.3.1/1054/2026; July 3, 2026). Administrative preparation preceded approval, but formal access to identifiable records and data extraction began only after approval. Participant confidentiality and anonymity were maintained throughout the study.

**Informed Consent Statement:** Written informed consent was obtained before each patient record was included in the formal data extraction.

**Data Availability Statement:** The data presented in this study are available from the corresponding author upon reasonable request. The data are not publicly available due to ethical and privacy considerations related to participant confidentiality.

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**Conflicts of Interest:** The author declares no conflict of interest.

## References

- Aditya, N. R., & Mustofa, S. (2023). Hypertension: An overview. *Majority*, 11, 128-138.
- Alaydrus, S., & Toding, N. (2019). Pola penggunaan obat hipertensi pada pasien geriatri di

- Rumah Sakit Anutapura Palu periode 08 Juli-08 Agustus 2019. *Jurnal Mandala Pharmacon Indonesia*, 5(2), 65-73.
- Health Development Policy Agency, Ministry of Health of the Republic of Indonesia. (2024). Key results of the 2023 Indonesian Health Survey (SKI 2023). <https://www.badankebijakan.kemkes.go.id/en/daftar-frequently-asked-question-seputar-hasil-utama-ski-2023/hasil-utama-ski-2023/>
- Khairiyah, U., Yuswar, M. A., & Purwanti, N. U. (2022). Pola penggunaan obat antihipertensi pada pasien hipertensi di instalasi rawat jalan rumah sakit. *Journal Syifa Sciences and Clinical Research*, 4(3), 609-617. <https://doi.org/10.37311/jsscr.v4i3.15446>
- Kuningan Regency Health Office. (2024). Hypertension morbidity and treatment data for the Selajambe Community Health Center service area, 2023-2024 [Unpublished administrative report].
- Natasia, A., Suprpti, S., & Trilestari. (2022). Gambaran penggunaan obat antihipertensi pada pasien hipertensi di Puskesmas Kotagede II bulan November-Desember 2020. *INPHARNMED Journal (Indonesian Pharmacy and Natural Medicine Journal)*, 6(2), 82-90. <https://doi.org/10.21927/inpharnmed.v6i2.2595>
- Pratiwi, W. N., & Melvani. (2023). Gambaran penggunaan obat antihipertensi di RSUD Sultan Suriansyah Banjarmasin. *Journal of Pharmaceutical Care and Sciences*, 4(1), 202-206. <https://doi.org/10.33859/jpcs.v4i1.259>
- Widyastuti, N., Noviar, N., & Putra, M. (2022). Gambaran penggunaan obat antihipertensi di bangsal penyakit dalam RSUD Dr. Achmad Darwis. *SITAWA: Jurnal Farmasi Sains dan Obat Tradisional*, 1(2), 59-70.
- World Health Organization. (2021). Guideline for the pharmacological treatment of hypertension in adults. World Health Organization. <https://www.who.int/publications/i/item/9789240033986>
- Yuswar, M. A., Rachmadani, E., & Untari, E. K. (2022). Identifikasi dampak interaksi obat antihipertensi terhadap tekanan darah pada pasien geriatri hipertensi yang dirawat inap di RSUD Dr. Soedarso Pontianak. *Jurnal Ilmiah Manuntung: Sains Farmasi dan Kesehatan*, 8(1), 163-172. <https://doi.org/10.51352/jim.v8i1.524>