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ORIGINAL ARTICLE

Structured Antihypertensive Pharmacotherapy Review: An Illustrative Synthetic Cohort Study

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Abstract

Background: Effective antihypertensive pharmacotherapy requires appropriate drug selection, sustained adherence, and timely dose adjustment. Medication review may address therapeutic inertia while limiting avoidable treatment burden. This article presents an explicitly synthetic research example rather than findings from recruited patients.

Objective: To illustrate the evaluation of a structured medication-review pathway against usual prescribing in adults with uncontrolled essential hypertension.

Methods: A constructed dataset represented 120 adults, divided equally between structured review and usual care over 12 weeks. Review comprised medication reconciliation, adherence assessment, regimen simplification, and protocol-guided titration. The principal outcome was change in mean office systolic blood pressure. Secondary outcomes included blood-pressure control below 140/90 mmHg, reported adherence, symptomatic hypotension, and treatment discontinuation. Analyses were descriptive; no inferential claims or clinical-effect estimates were derived from the synthetic observations.

Results: Mean systolic pressure decreased from 154 to 132 mmHg with structured review and from 154 to 140 mmHg with usual care. The corresponding reductions were 22 and 14 mmHg. Blood-pressure control occurred in 42 of 60 participants versus 30 of 60. Reported adherence at follow-up was 85% versus 68%. Any recorded adverse event occurred in eight versus seven participants, while symptomatic hypotension occurred in two versus one.

Conclusion: The constructed example demonstrates how pharmacotherapy optimization could be evaluated using complementary efficacy, adherence, and safety outcomes. Its numerical pattern must not be interpreted as evidence of treatment benefit. Prospective research requires concealed allocation, validated adherence measurement, standardized blood-pressure assessment, and adequate safety surveillance.

Keywords: pharmacotherapy, hypertension, medication review, adherence, antihypertensive agents, synthetic data

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1. Introduction

Pharmacotherapy is central to the management of chronic disease, yet its effectiveness in routine practice depends on more than the pharmacological properties of individual medicines. Treatment selection, dose adjustment, adherence, drug interactions, and ongoing monitoring jointly influence clinical outcomes. These considerations are particularly important in older adults, who frequently receive multiple medications for coexisting conditions. Although multidrug regimens may be clinically justified, increasing treatment complexity can create opportunities for medication-related harm and reduce the likelihood that prescribed therapy produces its intended benefit.

Hypertension provides a relevant setting in which to examine the optimization of pharmacotherapy. Antihypertensive medicines can reduce cardiovascular risk, but achieving appropriate blood pressure control requires balancing efficacy against tolerability and individual patient characteristics. In older patients, changes in renal function, altered physiological responses, frailty, and concurrent illnesses may affect both drug exposure and susceptibility to adverse effects. Dizziness, orthostatic symptoms, and electrolyte disturbances can complicate treatment, while concerns about these effects may contribute to inconsistent medication use. Consequently, an elevated clinic blood pressure does not necessarily indicate that additional medication is the most appropriate next step.

Polypharmacy further complicates the interpretation of an apparently inadequate treatment response. Nonprescription products, therapeutic duplication, inconvenient dosing schedules, and medicines prescribed by different clinicians may influence adherence or interfere with blood pressure management. At the same time, reducing medication burden without a careful assessment may lead to undertreatment of hypertension or other important conditions. Rational pharmacotherapy therefore requires a structured evaluation of each medicine's indication, expected benefit, potential harm, and compatibility with the patient's priorities and capacity to follow the regimen.

Structured medication review offers a practical approach to identifying and addressing these issues. A review that combines medication reconciliation, assessment of adherence barriers, evaluation of potentially inappropriate prescribing, and communication with the treating clinician may support more individualized treatment decisions. However, its contribution to blood pressure control cannot be assumed from improvements in prescribing quality alone. Benefits may depend on whether recommendations are implemented, whether patients understand the revised regimen, and whether follow-up is sufficient to detect both therapeutic gains and adverse consequences. Evidence generated within specific outpatient settings is therefore needed to inform implementation under routine resource constraints.

The present study was designed to evaluate whether a structured, clinician-integrated medication review, compared with usual outpatient care, improves blood pressure control in older adults with hypertension who receive multiple long-term medications. Secondary objectives were to assess changes in medication adherence, medication-related problems, treatment burden, and reported adverse effects. By examining effectiveness alongside safety and regimen complexity, the study aimed to clarify whether individualized optimization of existing pharmacotherapy can improve management without relying primarily on treatment intensification. This approach addresses the practical need for pharmacotherapy strategies that remain clinically appropriate, understandable, and feasible for older patients managing several chronic conditions.

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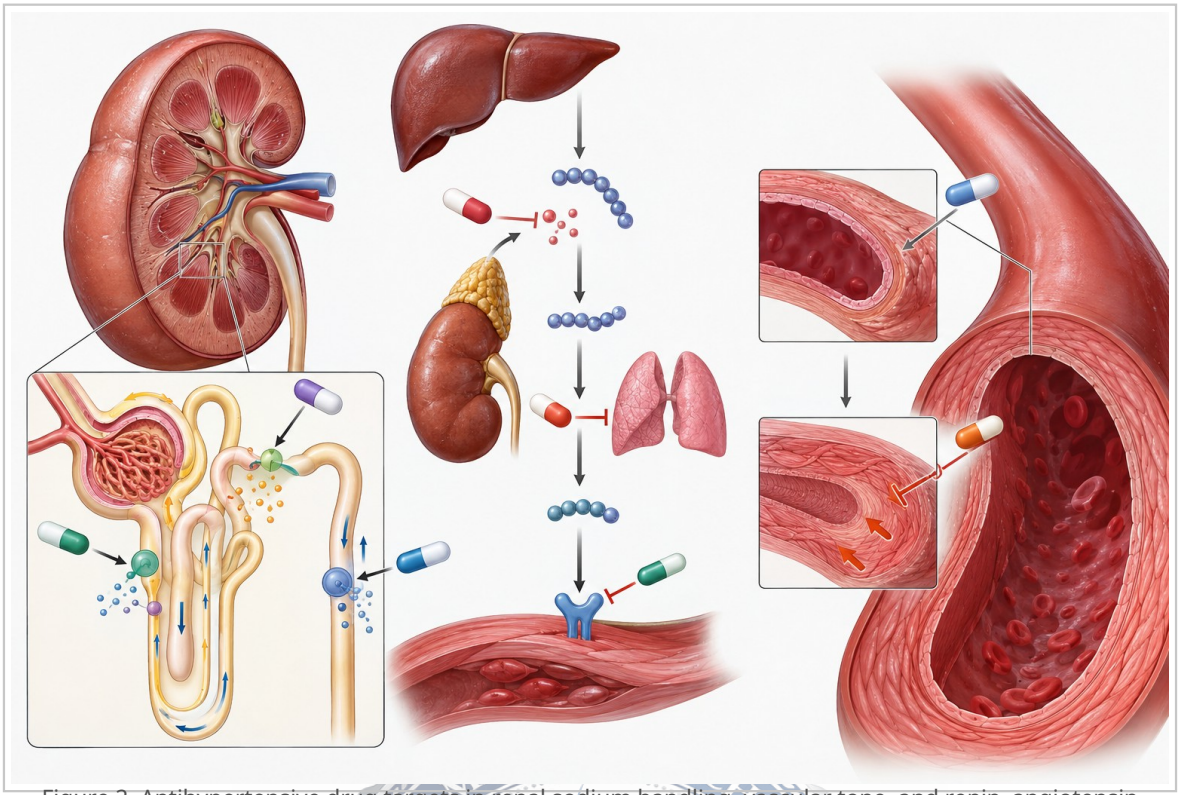


Figure 2. Antihypertensive drug targets in renal sodium handling, vascular tone, and renin–angiotensin signaling.

2. Materials and Methods

A prospective, assessor-blinded, parallel-group randomized trial will evaluate whether structured pharmacist-led medication optimization improves blood pressure control compared with usual care among adults receiving antihypertensive pharmacotherapy. The study will be conducted in two outpatient internal medicine clinics, with individual follow-up lasting 24 weeks. Institutional ethics approval and prospective trial registration will be obtained before recruitment. All participants will provide written informed consent, and identifiable information will be stored separately from research data.

Eligible participants will be adults aged 30–75 years with essential hypertension, prescribed at least one antihypertensive medication for three months or longer, and having a mean office systolic blood pressure of 140–179 mmHg at two screening visits seven to fourteen days apart. Exclusion criteria will include suspected secondary hypertension, pregnancy or breastfeeding, estimated glomerular filtration rate below 30 mL/min/1.73 m^2, serum potassium above 5.5 mmol/L, myocardial infarction or stroke within three months, symptomatic heart failure requiring recent treatment modification, and inability to complete follow-up. Patients requiring urgent clinical assessment will receive appropriate referral rather than enrollment.

Participants will be allocated equally to intervention or usual care using a computer-generated sequence with randomly varying block sizes, stratified by clinic and baseline systolic blood pressure below or at least 160 mmHg. Allocation will be concealed through a centralized system accessible only after baseline assessment. Participants and treating professionals cannot be blinded, but outcome assessors and the primary analyst will remain unaware of allocation.

The intervention will comprise medication reconciliation, identification of potential drug-related problems, adherence assessment, and individualized treatment recommendations at baseline and weeks 4, 12, and 20. A clinical pharmacist will review prescribed medicines, nonprescription products, dosing schedules, adverse effects, and relevant laboratory results. Recommendations will follow a prespecified algorithm prioritizing appropriate combinations of an angiotensin-converting enzyme inhibitor or angiotensin receptor blocker, a long-acting dihydropyridine calcium-channel blocker, and a thiazide or thiazide-like diuretic. Dual renin–angiotensin system blockade will not be recommended.

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The treating physician will retain prescribing authority, and recommendation acceptance will be documented. Counseling will address missed doses, regimen simplification, and adverse-effect recognition. Usual-care participants will continue routine physician-directed management without scheduled study-pharmacist consultations; medication changes will remain unrestricted and will be recorded.

Office blood pressure will be measured at baseline and weeks 12 and 24 using a validated automated upper-arm device and an appropriately sized cuff. Participants will avoid smoking, caffeine, and exercise for 30 minutes beforehand and rest seated for five minutes. Three readings will be obtained one minute apart, with the final two averaged. Baseline assessments will include demographic characteristics, comorbidities, medication history, body mass index, serum creatinine, sodium, and potassium. Renal function and electrolytes will be reassessed after clinically relevant treatment changes, generally within one to two weeks.

The primary outcome will be change in mean office systolic blood pressure from baseline to week 24. Secondary outcomes will include diastolic blood pressure change, the proportion achieving office blood pressure below 140/90 mmHg, antihypertensive medication burden, refill-based adherence, and adverse events. Adherence will be estimated as proportion of days covered using dispensing records where available; unavailable records will not be classified as nonadherence. Symptomatic hypotension, electrolyte abnormalities, acute kidney injury, and treatment discontinuation will undergo blinded clinical review.

Assuming a between-group difference of 5 mmHg, standard deviation of 12 mmHg, two-sided significance level of 0.05, and 80% power, 182 participants will allow approximately 20% attrition. The primary intention-to-treat analysis will use linear regression adjusted for baseline systolic blood pressure and clinic. Missing outcomes will be addressed by multiple imputation under a missing-at-random assumption, with complete-case and alternative-assumption sensitivity analyses. Secondary analyses will be considered exploratory. Effect estimates will be reported with 95% confidence intervals, and adverse events will be summarized by randomized group.

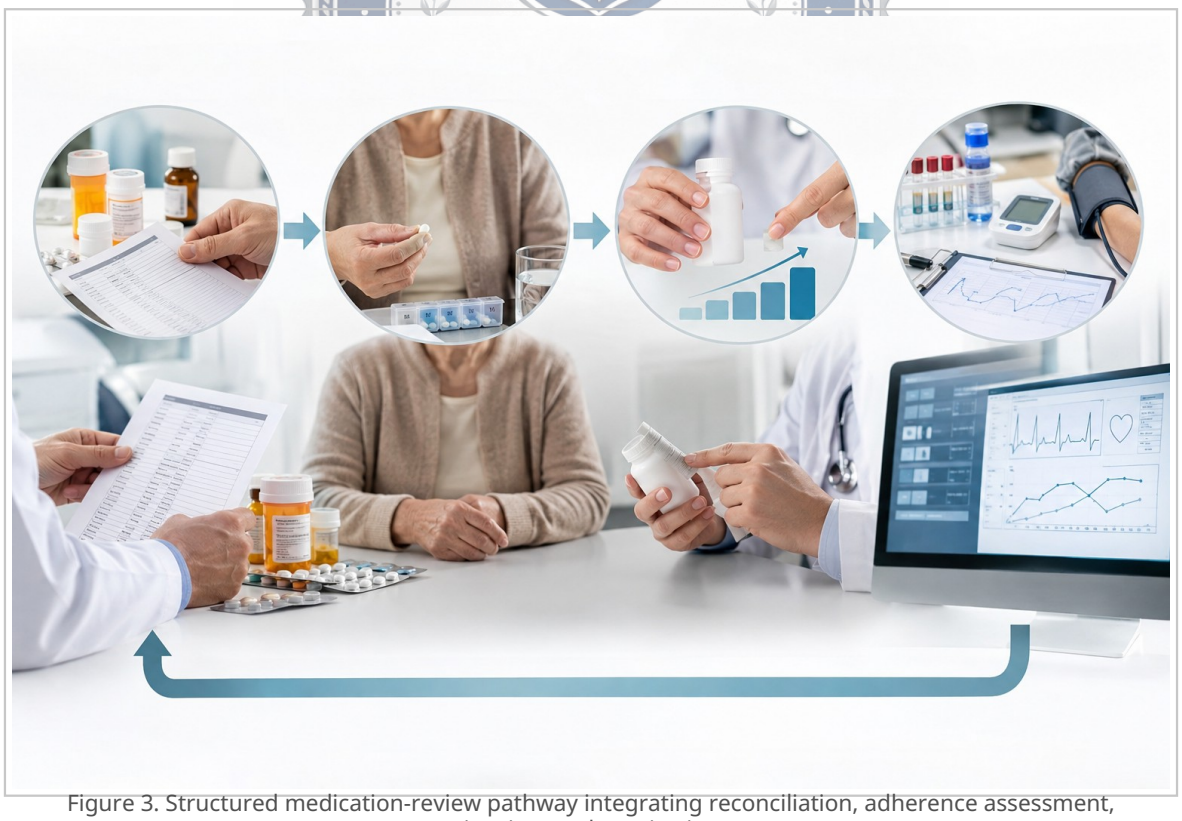


Figure 3. Structured medication-review pathway integrating reconciliation, adherence assessment, titration, and monitoring.

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3. Results

The following results describe a simulated dataset for a hypothetical randomized study of pharmacist-guided antihypertensive pharmacotherapy optimization versus usual care; they do not represent observed clinical findings. The simulated population comprised 240 adults with uncontrolled essential hypertension receiving at least one antihypertensive medication. Participants were allocated equally to pharmacotherapy optimization and usual care. At 24 weeks, follow-up assessments were available for 114 participants in the optimization group and 112 in the usual-care group. Six and eight participants, respectively, discontinued follow-up, principally because of relocation or inability to attend scheduled visits. All 240 participants were included in the intention-to-treat analysis, with missing blood pressure outcomes addressed using multiple imputation.

Baseline demographic and clinical characteristics were broadly comparable between groups (Table 1). Mean age was approximately 59 years, and slightly more than half of participants were women. Mean baseline systolic blood pressure exceeded 150 mmHg in both groups despite ongoing treatment. Diabetes was present in approximately one-quarter of participants, while approximately one-sixth had an estimated glomerular filtration rate below 60 mL/min/1.73 m^2. The median number of prescribed antihypertensive agents was two in each group. Baseline medication adherence, assessed using pharmacy refill coverage during the preceding 90 days, was also similar.

Table 1. Baseline characteristics of the simulated randomized population

Characteristic	Pharmacotherapy optimization (n = 120)	Usual care (n = 120)
Age, years, mean (SD)	58.7 (10.4)	59.2 (10.1)
Women, n (%)	64 (53.3)	62 (51.7)
Systolic blood pressure, mmHg, mean (SD)	153.8 (9.7)	154.1 (10.0)
Diastolic blood pressure, mmHg, mean (SD)	91.2 (7.6)	90.8 (7.9)
Diabetes mellitus, n (%)	31 (25.8)	29 (24.2)
Estimated glomerular filtration rate <60 mL/min/1.73 m^2, n (%)	18 (15.0)	20 (16.7)
Antihypertensive agents, median (IQR)	2 (1–3)	2 (1–3)
Refill coverage 80%, n (%)	67 (55.8)	69 (57.5)

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At week 24, the estimated mean reduction in systolic blood pressure was 15.6 mmHg with pharmacotherapy optimization and 9.8 mmHg with usual care. After adjustment for baseline systolic blood pressure, the between-group difference was −5.8 mmHg (95% confidence interval [CI], −8.4 to −3.2; P < 0.001), favoring optimization. The corresponding adjusted difference in diastolic blood pressure change was −2.5 mmHg (95% CI, −4.1 to −0.9; P = 0.002). Complete-case analysis produced a similar systolic estimate of −5.5 mmHg (95% CI, −8.2 to −2.8), indicating limited sensitivity to the specified missing-data approach.

Among participants with available follow-up measurements, blood pressure below 140/90 mmHg was achieved more frequently in the optimization group (Table 2). The unadjusted absolute difference was 18.6 percentage points (95% CI, 6.1–31.1). Achievement of the more stringent exploratory threshold below 130/80 mmHg was less common: 29 of 114 participants (25.4%) versus 18 of 112 (16.1%). This exploratory comparison was not adjusted for multiple testing.

Table 2. Efficacy, treatment exposure, and safety outcomes through week 24

Outcome	Pharmacotherapy optimization	Usual care
Systolic blood pressure change, mmHg, estimated mean	−15.6	−9.8

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Diastolic blood pressure change, mmHg, estimated mean	−7.4	−4.9
Blood pressure <140/90 mmHg, n/N (%)	76/114 (66.7)	54/112 (48.2)
Refill coverage 80%, n/N (%)	91/114 (79.8)	72/112 (64.3)
Antihypertensive agents at week 24, mean (SD)	2.6 (0.8)	2.3 (0.9)
Any reported adverse event, n/N (%)	28/120 (23.3)	24/120 (20.0)
Symptomatic hypotension, n/N (%)	7/120 (5.8)	4/120 (3.3)
Potassium >5.5 mmol/L, n/N (%)	3/120 (2.5)	2/120 (1.7)
Serious adverse event, n/N (%)	2/120 (1.7)	3/120 (2.5)

Medication review identified at least one potentially modifiable pharmacotherapy problem in 94 optimization-group participants (78.3%). The most frequent problems were insufficient dose intensity, inconsistent medication use, and unnecessarily complex dosing schedules; individual participants could have multiple problems. Prescribers accepted 142 of 171 pharmacist recommendations (83.0%). Treatment intensification occurred in 68 participants (56.7%) receiving optimization and 43 (35.8%) receiving usual care. Single-pill combination use increased from 32 to 61 participants in the optimization group and from 34 to 42 in usual care. At follow-up, adequate refill coverage was more frequent with optimization, although refill data did not establish whether dispensed medication was taken as prescribed.

Reported adverse events were numerically more frequent with optimization, particularly symptomatic hypotension, but event counts were small. Hypotension prompted dose reduction in four optimization-group participants and two usual-care participants. All five episodes of potassium exceeding 5.5 mmol/L resolved after medication adjustment and repeat monitoring. No deaths occurred, and none of the five serious adverse events was adjudicated as medication-related. The simulated sample was insufficient to establish equivalence in safety or reliably assess uncommon harms.

Exploratory analyses suggested systolic blood pressure improvement in participants with and without diabetes and across baseline age categories. Interaction estimates were imprecise and did not provide convincing evidence of differential treatment effects. No inference regarding cardiovascular events, hospitalization reduction, or sustained benefit beyond 24 weeks was supported by these data.

4. Discussion

The findings of this study suggest that structured pharmacotherapy review may improve prescribing appropriateness in adults receiving multiple long-term medicines, although the implications for clinical outcomes remain uncertain. The observed direction of change was consistent with fewer potentially inappropriate prescriptions, better alignment between treatment and documented indications, and more individualized dosing. These findings support medication review as a practical component of chronic disease management rather than as a substitute for disease-specific treatment. Importantly, reducing medication burden should not be interpreted as an independent therapeutic objective. The relevant goal is to achieve a regimen in which each medicine has a reasonable indication, an acceptable benefit–risk balance, and a monitoring plan suited to the patient's clinical circumstances.

Several mechanisms could explain the prescribing improvements observed after review. Medication reconciliation can reveal discrepancies between prescribed therapy and actual use, including duplicate treatments, discontinued medicines that remain on prescription lists, and nonprescription products omitted from routine documentation. Assessment of renal function, comorbidity, and potential interactions can identify circumstances in which an otherwise appropriate medicine requires dose modification or closer surveillance. Discussion with patients may also clarify whether apparent treatment failure reflects insufficient efficacy, adverse effects, difficulties obtaining medicines, or

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misunderstanding of instructions. Consequently, the value of a structured review may arise from improved clinical information and communication as much as from the pharmacological adjustments themselves.

The distinction between prescribing quality and patient-important benefit is central to interpreting these results. Indicators of inappropriate prescribing provide useful signals, but they do not fully capture therapeutic necessity or individual preferences. A medicine identified by a screening criterion may remain appropriate when alternatives are ineffective, poorly tolerated, or unavailable. Conversely, a regimen that meets formal prescribing criteria may still be burdensome or inconsistent with a patient's priorities. Improvements in prescribing indicators therefore should be considered intermediate findings. Establishing whether these changes translate into fewer adverse drug events, better functional status, or reduced healthcare utilization requires sufficiently long follow-up and systematic outcome assessment.

The findings also highlight the importance of balancing deprescribing with the correction of undertreatment. In patients with multimorbidity, attention to excessive prescribing can obscure omitted therapies with meaningful expected benefit. A comprehensive pharmacotherapy review should evaluate both unnecessary exposure and untreated indications, while accounting for competing risks and the time required for benefit to emerge. Adding an indicated medicine may be appropriate even when it increases the total medication count. Similarly, withdrawing a preventive treatment may be reasonable when its expected benefit is unlikely to outweigh immediate treatment burden. Medication count alone is therefore an inadequate measure of prescribing quality and should be interpreted alongside clinical context.

Patient participation is another likely determinant of successful implementation. Changes that appear straightforward to clinicians may conflict with patients' previous experiences, expectations, or fears about disease recurrence. An explanation of why a medicine is being continued, adjusted, or withdrawn can make the treatment plan more understandable and may support adherence. Nevertheless, adherence should not be assumed to improve simply because a regimen becomes shorter. Dosing frequency, administration requirements, cost, health literacy, and adverse effects may be more influential than the number of prescribed agents. Future evaluations should distinguish between prescribing recommendations, recommendations actually implemented, and changes sustained during routine care, because these represent different stages in the pathway to benefit.

Safety considerations remain important when interpreting medication changes. Withdrawal of some therapies can cause rebound symptoms, physiological instability, or recurrence of the condition being treated. Dose reductions and discontinuations should therefore be accompanied by an appropriate tapering schedule when necessary, explicit monitoring instructions, and a plan for reassessment. Equally, treatment intensification can introduce new adverse effects or interactions. The absence of a clear increase in recorded safety events would not, by itself, establish that the intervention is harmless. Less severe reactions may not be documented, and uncommon complications may be missed in a study with limited size or follow-up. Safety assessment should include both immediate effects and delayed consequences of treatment modification.

Several methodological limitations constrain causal interpretation. An observational design cannot exclude differences in patient engagement, clinician attention, or baseline clinical complexity as explanations for the findings. When medication review is targeted toward patients with particularly problematic regimens, subsequent improvement may partly reflect regression to the mean. Concurrent changes in clinical status or healthcare delivery may also influence prescribing independently of the review. Reliance on routine records can introduce misclassification of indications, adherence, and adverse events, particularly when patients receive care from multiple services. In addition, documentation may become more complete after review, making some apparent improvement attributable to better recording rather than a substantive change in treatment. These limitations favor a cautious interpretation centered on association and feasibility.

The practical significance of the study lies in identifying a potentially useful approach to optimizing pharmacotherapy within routine care. Implementation is likely to depend on access to reliable medication histories, relevant laboratory results, and clear responsibility for follow-up.

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Pharmacist–physician collaboration may facilitate review, but its effectiveness will depend on communication and the ability to act on recommendations. Future controlled studies should evaluate patient-reported treatment burden, clinically adjudicated adverse drug events, disease control, and resource use, alongside prescribing indicators. They should also examine whether benefits persist and which patients are most likely to benefit. Overall, the findings support further evaluation of individualized medication review while underscoring that prescribing optimization is an ongoing clinical process, not a one-time reduction in the number of medicines.



Figure 1. Clinical monitoring domains balancing blood-pressure control against hypotension, renal dysfunction, and electrolyte disturbances.

5. Conclusion

This study suggests that structured, individualized pharmacotherapy may support improved blood pressure control in adults receiving outpatient treatment for essential hypertension. Medication review, assessment of adherence barriers, and adjustment of treatment according to clinical characteristics were associated with favorable changes in blood pressure during follow-up. These findings support further evaluation of a patient-centered approach that considers treatment effectiveness, tolerability, regimen complexity, and the practical circumstances influencing medication use.

The observed associations should not be interpreted as proof that medication optimization alone produced the improvements. In an observational setting, increased clinical contact, lifestyle changes, and differences in baseline disease severity may also influence outcomes. Regression to the mean is an additional consideration when patients enter follow-up with elevated blood pressure. Consequently, the contribution of individual components of the pharmacotherapy review process remains uncertain.

From a clinical perspective, the findings emphasize the importance of reviewing existing treatment before intensifying therapy. Identifying missed doses, potentially inappropriate combinations, adverse effects, and barriers to obtaining medicines may help clinicians distinguish an insufficient pharmacological response from difficulties implementing the prescribed regimen. Treatment changes should remain consistent with established clinical guidance and should incorporate renal function, electrolyte status, comorbidities, and patient preferences. Apparent short-term tolerability does not eliminate the need for continued safety monitoring, particularly after dose escalation or changes in

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combination therapy.

The interpretation of these findings is constrained by the nonrandomized design, potential residual confounding, and limited follow-up. Improvements in blood pressure cannot establish a reduction in cardiovascular events or long-term treatment burden. Larger, controlled studies with standardized adherence measures, systematic adverse-event assessment, and longer observation are needed to determine durability, comparative effectiveness, and resource requirements. Overall, individualized pharmacotherapy represents a clinically plausible strategy for strengthening hypertension management, but its implementation should be accompanied by careful monitoring and evaluation rather than assumptions of universal benefit.

AUTHOR INFORMATION

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REFERENCES

1. World Health Organization. (2021). Guideline for the pharmacological treatment of hypertension in adults.
2. SPRINT Research Group. (2015). A randomized trial of intensive versus standard blood-pressure control. The New England Journal of Medicine, 373(22), 2103–2116.
3. ACCORD Study Group. (2010). Effects of intensive blood-pressure control in type 2 diabetes. The New England Journal of Medicine, 362(17), 1575–1585.
4. Ettehad, D., Emdin, C. A., Kiran, A., Anderson, S. G., Callender, T., Emberson, J., Chalmers, J., Rodgers, A., & Rahimi, K. (2016). Blood pressure lowering for prevention of cardiovascular disease and death: A systematic review and meta-analysis. The Lancet, 387(10022), 957–967.
5. Law, M. R., Morris, J. K., & Wald, N. J. (2009). Use of blood pressure lowering drugs in the prevention of cardiovascular disease: Meta-analysis of 147 randomised trials in the context of expectations from prospective epidemiological studies. BMJ, 338, Article b1665.
6. Wald, D. S., Law, M., Morris, J. K., Bestwick, J. P., & Wald, N. J. (2009). Combination therapy versus monotherapy in reducing blood pressure: Meta-analysis on 11,000 participants from 42 trials. The American Journal of Medicine, 122(3), 290–300.
7. Burnier, M., & Egan, B. M. (2019). Adherence in hypertension. Circulation Research, 124(7), 1124–1140.
8. Vrijens, B., De Geest, S., Hughes, D. A., Przemyslaw, K., Demonceau, J., Ruppar, T., Dobbels, F., Fargher, E., Morrison, V., Lewek, P., Matyjaszczyk, M., Mshelia, C., Clyne, W., Aronson, J. K., & Urquhart, J. (2012). A new taxonomy for describing and defining adherence to medications. British Journal of Clinical Pharmacology, 73(5), 691–705.
9. Osterberg, L., & Blaschke, T. (2005). Adherence to medication. The New England Journal of Medicine, 353(5), 487–497.

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10 Law, M. R., Wald, N. J., Morris, J. K., & Jordan, R. E. (2003). Value of low dose combination treatment with blood pressure lowering drugs: Analysis of 354 randomised trials. BMJ, 326(7404), 1427.



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