

## Integrated management of cardiometabolic risk in patients with hypertension and coronary artery

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### ANNOTATION

*Cardiovascular diseases remain the leading cause of premature morbidity and mortality worldwide, and most patients seen in internal medicine (“therapy”) settings present with clustered, mutually reinforcing risks—hypertension, dyslipidaemia, diabetes, chronic kidney disease (CKD), and established atherosclerotic cardiovascular disease. This integrative review summarizes a practical, evidence-based approach that bridges терапия + кардиология: (1) early risk stratification and accurate blood pressure measurement with prompt intensification when targets are not achieved; (2) comprehensive cardiometabolic prevention through lifestyle therapy plus pharmacologic risk reduction (lipid lowering, glucose-lowering agents with cardiovascular benefit, and kidney-protective strategies); and (3) guideline-directed management of chronic coronary disease and heart failure, emphasizing individualized therapy selection, adherence, and longitudinal monitoring. Contemporary guidance increasingly converges on a “treat-to-risk / treat-to-target” model: lowering blood pressure and LDL-cholesterol proportionate to absolute risk, prioritizing therapies with proven outcome benefits (e.g., high-intensity statins and add-on nonstatin agents when needed, SGLT2 inhibitors in appropriate diabetes/CKD/heart failure phenotypes), and coordinated follow-up to reduce events and improve quality of life. This меѓаневмокардиологически framework supports consistent decision-making across outpatient and inpatient care and is designed to be implementable in routine clinical practice.*

**Keywords:** *Hypertension; chronic coronary syndromes; chronic coronary disease; ASCVD prevention; dyslipidemia; diabetes mellitus; obesity; chronic kidney disease; heart failure prevention; statins; nonstatin lipid therapy; SGLT2 inhibitors; GLP-1 receptor agonists; integrated outpatient care.*

## **INTRODUCTION.**

Patients seen in internal medicine (“therapy”) clinics often present with overlapping cardiovascular and metabolic problems—hypertension, abdominal obesity, dyslipidemia, impaired glucose tolerance or diabetes, and early kidney dysfunction. These conditions share common drivers (insulin resistance, inflammation, endothelial dysfunction) and frequently progress together toward atherosclerotic cardiovascular disease (ASCVD), heart failure, stroke, and chronic kidney disease. Because of this overlap, outcomes improve most when care is integrated: risk is assessed comprehensively, therapy targets are coordinated, and follow-up is structured. Most real-world patients do not have “one diagnosis.” Hypertension, dyslipidemia, diabetes, obesity, and CKD form a tightly linked cardiometabolic cluster that accelerates vascular aging, endothelial dysfunction, left ventricular remodeling, and atherosclerosis. Because total risk is driven by the combination of factors, clinical impact is highest when therapy and cardiology coordinate goals and treatment sequencing—especially for patients with established coronary disease or high predicted risk. Recent European and North American guidelines emphasize structured evaluation, risk-based treatment intensity, and longitudinal follow-up for both elevated blood pressure/hypertension and chronic coronary conditions. Patients seen in internal medicine and cardiology rarely present with a single, isolated diagnosis. Hypertension, dyslipidemia, type 2 diabetes (or prediabetes), obesity, chronic kidney disease, and stable coronary disease frequently coexist and amplify each other’s impact on vascular injury, myocardial remodeling, and long-term event risk. An integrated “therapy + cardiology” approach treats cardiometabolic risk as one interconnected system: it aligns targets across conditions, prioritizes therapies with proven cardiovascular and renal benefit, and reduces therapeutic inertia through structured follow-up. Contemporary guidance emphasizes clearer diagnostic pathways for elevated blood pressure and hypertension and long-term

management frameworks for chronic coronary syndromes/chronic coronary disease, both of which fit naturally into a unified outpatient pathway. A practical integrated evaluation starts by defining whether the patient is in primary prevention (no prior atherosclerotic cardiovascular disease event) or secondary prevention (established coronary, cerebrovascular, or peripheral arterial disease). This distinction matters because it changes the intensity of lipid-lowering, antithrombotic strategy, and the threshold for escalation. Next, blood pressure status should be confirmed with correct technique and complemented by home blood pressure monitoring (or ambulatory monitoring when available) to identify white-coat or masked patterns, which are common reasons for misclassification and undertreatment. In parallel, clinicians should assess cardiometabolic drivers and target-organ involvement: lipid profile, fasting glucose and/or HbA1c, body weight and waist measures, kidney function (eGFR) and urine albumin, plus baseline ECG and symptom-driven cardiac imaging when appropriate. The 2024 guidance from European Society of Cardiology underscores systematic diagnosis, evaluation, and management processes for elevated blood pressure and hypertension, while chronic coronary guidelines focus on long-term risk reduction and symptom control. From an integrated therapy standpoint, the core objective is not only “better numbers” but durable reduction in myocardial infarction, stroke, heart failure, kidney decline, and cardiovascular death.

That requires choosing interventions that address shared mechanisms: endothelial dysfunction, inflammation, sympathetic overactivity, sodium retention, and atherogenic lipid exposure. Lifestyle measures remain foundational—especially sodium reduction, weight management, regular physical activity, sleep optimization, and smoking cessation—because they act simultaneously on blood pressure, insulin resistance, lipids, and inflammatory tone. However, lifestyle rarely replaces medication in high-risk patients; it complements it and improves the likelihood that targets are met with fewer drugs and fewer adverse effects. For blood pressure control, modern practice increasingly favors earlier use of combination therapy (rather than slow stepwise monotherapy), because most patients need more than one agent to achieve stable control and reduce variability. In an integrated pathway, selection is guided by comorbidities

and organ protection: renin–angiotensin system blockade is commonly prioritized when albuminuria or diabetic kidney involvement is present; beta-blockers may be particularly relevant when there is angina, prior myocardial infarction, certain arrhythmias, or specific heart failure phenotypes; and diuretics or calcium-channel blockers are often used in combination to improve control and reduce volume-driven hypertension. The 2024 European Society of Cardiology hypertension guidance highlights simplified classification and practical management processes that support timely diagnosis, evaluation, and treatment escalation.

In parallel, atherosclerotic risk reduction is treated as a central “pillar,” not an optional add-on, because vascular events often occur despite acceptable blood pressure if LDL exposure and thrombosis risk remain high. In patients with chronic coronary disease, guideline frameworks from American Heart Association and American College of Cardiology emphasize patient-centered, team-based decisions to reduce future events and control symptoms, integrating antianginal therapy, lipid lowering, and appropriate antithrombotic strategies with attention to bleeding risk and comorbidities. Importantly, antiplatelet and revascularization decisions are individualized; the integrated model ensures these decisions are made with full awareness of blood pressure control, kidney function, diabetes status, and drug–drug interactions. Lipid management in integrated care is inherently risk-based. The general principle is stepwise intensification proportional to baseline risk (especially in secondary prevention), aiming to reduce cumulative LDL burden over time. Statins remain the foundation for most patients with elevated ASCVD risk, with escalation to additional lipid-lowering therapies when LDL reduction is insufficient or when risk is very high.

This risk-based intensification aligns closely with chronic coronary guidance and modern preventive cardiology practice, where the goal is sustained event reduction rather than short-term laboratory improvement. Diabetes and obesity management have become core cardiology-relevant interventions because several glucose-lowering and weight-focused therapies provide cardiovascular and kidney benefit beyond glycemic control. The American Diabetes Association Standards of Care emphasize that, in people with established cardiovascular disease, heart failure, chronic kidney disease, or

multiple cardiovascular risk factors, selection of agents with proven cardiovascular benefit (notably SGLT2 inhibitors and GLP-1 receptor agonists in appropriate patients) should be driven by cardiorenal risk and not only by HbA1c or background metformin use. This aligns with an integrated pathway: therapy and cardiology collaborate to choose metabolically effective treatments that also lower hospitalization risk, slow kidney decline, and reduce major adverse cardiovascular events where evidence supports benefit. Kidney protection is not a separate specialty concern; it is a cardiovascular priority because CKD and albuminuria markedly increase vascular risk and complicate medication choice, dosing, and safety monitoring. KDIGO emphasizes CKD evaluation and risk stratification using the “cause–GFR–albuminuria” framework and highlights albuminuria as a crucial marker for prognosis and treatment planning. In integrated care, this translates into routine screening for albuminuria in high-risk groups, careful monitoring of renal function after initiating or adjusting key therapies, and avoidance of nephrotoxic exposures where possible. Because CKD can silently progress, structured monitoring prevents late discovery at a stage where cardiovascular complications are already advanced. The operational difference between “good intentions” and real outcome improvement is follow-up design. Integrated pathways work best when they use home blood pressure logs, early post-change check-ins, and predefined laboratory reassessment intervals to prevent months of uncontrolled risk factors. A common pattern is an early review after medication changes to assess adherence and tolerability, then a medium-term review to confirm sustained BP control and lipid response, and ongoing periodic monitoring of kidney function and glycemic markers when relevant. This structured cadence reduces therapeutic inertia and ensures that treatment intensification happens when targets are missed rather than being postponed repeatedly.

Finally, an integrated therapy–cardiology model is inherently team-based and patient-centered. It accounts for social determinants, health literacy, and regimen simplicity—because adherence, affordability, and side effects determine whether evidence-based therapy becomes real-world protection. When clinicians align targets, select therapies with overlapping benefits, monitor with a predictable cadence, and escalate without delay when control is inadequate, patients with complex cardiometabolic disease achieve better long-term stability and lower event risk.

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