

Hypertensive Urgency in Low- and Middle-Income Countries

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Hypertensive urgency is a subcategory of hypertensive crisis defined as an acute increase of systolic/diastolic blood pressure exceeding 180/120 mm Hg, without signs or symptoms of acute hypertensive target organ damage.¹ When there is presence of end-organ damage associated with this acute and severe rise in blood pressure, this subcategory of hypertensive crisis is referred to as hypertensive emergency.¹

Hypertensive urgency is a risk factor for cardiovascular disease, end-organ damage, and death when not identified and managed.² The majority of hypertensive urgency cases are caused by nonadherence to antihypertensive medication.³ Studies reporting prevalence and outcomes of hypertensive urgency are limited and the majority of data are found in developed countries. In Africa, the estimated prevalence of hypertension in older adults ranges from 22.3% to 90.0%.⁴ The prevalence of hypertensive crisis in outpatient and emergency departments ranges from 2.5% to 5%.^{5,6} Of all cases of hypertensive crisis, hypertensive urgency ranges from 33% to 65% and hypertensive emergency accounts for about 68%.^{5,6}

Although data are limited in low- and middle-income countries (LMICs), this interesting study by Reis *et al.*⁷ bridges the gap and provides insight into the reality that hypertensive urgency and its outcomes are a real burden in LMICs. Reis *et al.* conducted a study in Tanzania where they screened 7,600 participants at a local clinic and found that the prevalence of hypertensive crisis and hypertensive urgency were 2.6% and 2.2%, respectively.⁷ Among those with hypertensive crisis (199), hypertensive urgency accounted for 82%, which is much higher than may have been reported in Africa.^{5,6}

Reis *et al.* followed 150 out of the 164 participants with hypertensive urgency for 1 year and found that poor adherence to antihypertensive medication was the strongest predictor of hospitalization and death. In Africa, especially in the sub-Saharan region, the prevalence of nonadherence (low

plus moderate adherence) to antihypertensive medications can be as high as 99%.⁸ Some of the factors associated with poor adherence that may lead to adverse outcomes in LMICs include availability and cost of medications, use of traditional medicine believed to treat hypertension,⁹ poor access and availability of health systems, and poor levels of awareness and treatment (<10%) of hypertension.¹⁰ The work by Reis *et al.* highlights the need for interventions toward improved adherence to antihypertensive medication especially in patients with hypertensive urgency to avoid morbidity and mortality.

The study also demonstrates the feasibility and importance of using a simple self-reported medication adherence assessment tool to predict and identify high risk patients for hospitalization and death in 1 year. The adherence tool they used is a simple 3-question scale adopted from the Hill-Bone questionnaire.¹¹ This tool was not only easy but also effective in identifying patients with hypertensive urgency who were at high risk of hospitalization and death. In Africa and western countries where public health institutions are usually faced with a high turnover of clients in the outpatient and emergency departments, the tool used by Reis *et al.* is potentially practical and efficient. We have, therefore, designed a summary algorithm to identify risk for future hospitalization and death following the data by Reis *et al.* (Figure 1) which can be used in the emergency and outpatient departments.

Indeed, the study by Reis *et al.* highlights the need for more studies and interventions in LMICs that are tailored toward mitigating the prevalence and incidence of hypertensive crisis. Though data may be lacking, hypertensive crisis, and hypertensive urgency are very common in LMICs.^{9,12} Data on physical activity, lifestyle, sociodemographic, and clinical outcomes associated with hypertensive urgency are warranted.

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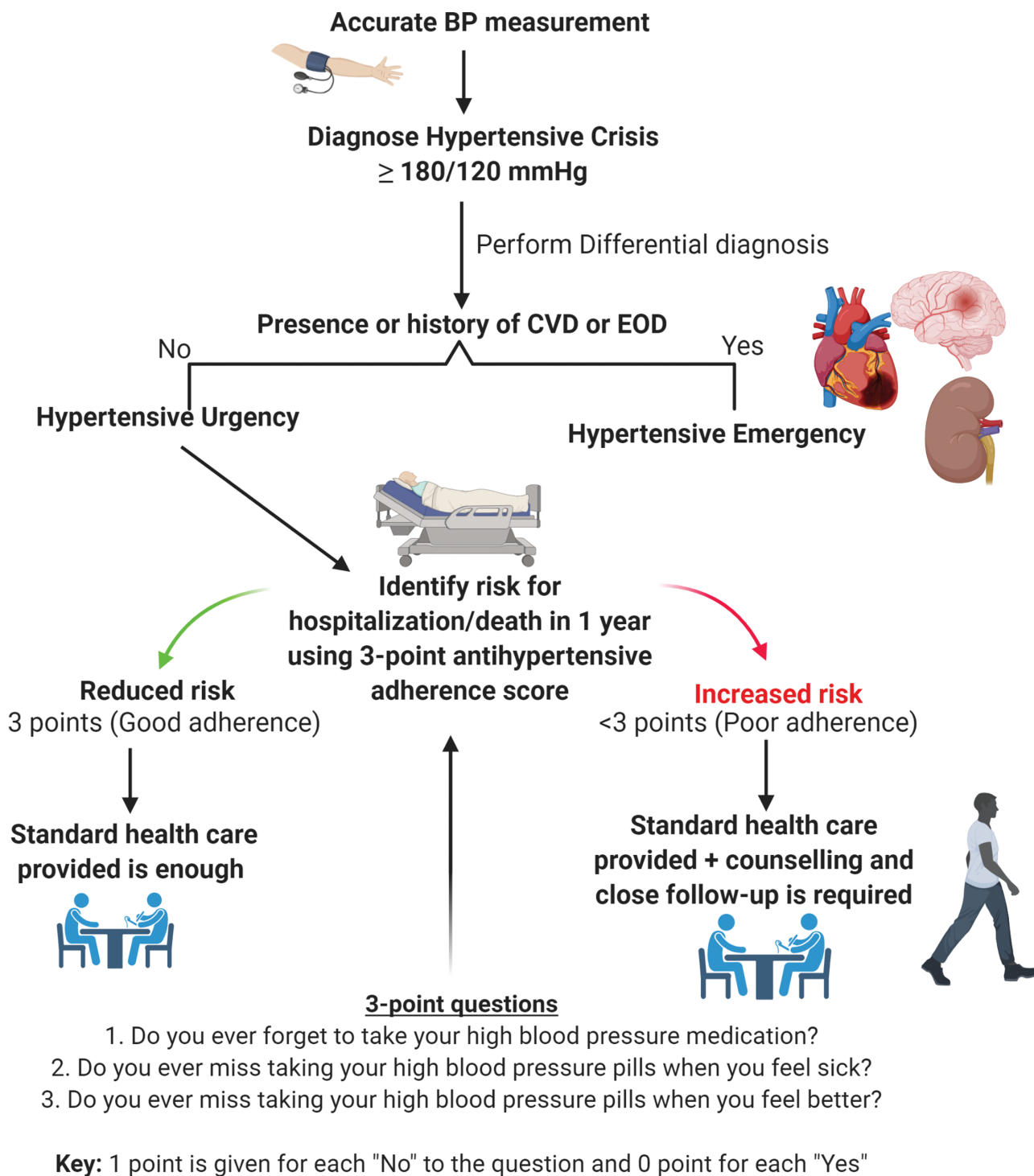


Figure 1. Hypertensive urgency algorithm to identify risk for future hospitalization and death. Blood pressure (BP) was measured accurately to diagnose hypertensive crisis by having participants sit with their back supported and legs uncrossed with their feet flat on the floor for 5 minutes before the measurement. Hypertensive urgency was diagnosed based on absence of cardiovascular disease (CVD) and end-organ damage (EOD) in patients with hypertensive crisis. Using 3 adherence questions, they identified the risk for hospitalization and death. Participants with 3 points had reduced risk while those with <3 points had increased risk for hospitalization/death in 1 year. Additional close follow-up is highly recommended for patients with poor adherence (<3 points). Created with [BioRender.com](https://www.biorender.com).

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DISCLOSURE

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