

Therapeutic Wheel for Hypertension: A Squared Critique

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The multispecialty consensus by Wander et al.¹ proposes a visually intuitive “therapeutic wheel” to guide individualized antihypertensive therapy across diverse comorbid conditions. While this framework is educational and innovative, its clinical utility is limited by several conceptual, scientific, and practical shortcomings. This commentary critically appraises the wheel in the context of contemporary hypertension management, with emphasis on special populations, resistant hypertension, evolving pharmacotherapy, multimorbidity, and interventional strategies. We shall be discussing the potential deficiencies in the proposed concept of the hypertension wheel in light of currently available evidence.

OMISSION OF KEY HIGH-RISK POPULATIONS

Hypertension in Pregnancy

Hypertensive disorders of pregnancy (HDP) represent a distinct pathophysiological entity characterized by abnormal placentation, endothelial dysfunction, and heightened cardiovascular risk later in life. Management of HDP differs fundamentally from nonpregnant hypertension. RAAS inhibitors, mineralocorticoid receptor antagonists, and SGLT2 inhibitors are contraindicated because of fetal toxicity, whereas labetalol, nifedipine, and methyldopa are first-line agents. Blood pressure thresholds and targets are gestation-specific. The absence of this phenotype from the therapeutic wheel undermines its claim of comprehensive, multispecialty guidance.

Hypertension in the Elderly

Older adults account for the majority of hypertensive patients. Aging is associated with arterial stiffening, isolated systolic hypertension, orthostatic hypotension, frailty, and polypharmacy. Excessive BP lowering in this group increases the risk of syncope, falls, cognitive decline, and renal dysfunction. Current guidelines recommend individualized systolic targets, cautious titration, and avoidance of

aggressive multidrug therapy in frail elderly patients. The therapeutic wheel does not address these complexities, limiting its relevance in geriatric care.

OVERSIMPLIFICATION OF HEART FAILURE PHENOTYPES

The wheel groups all heart failure patients together without distinguishing HFpEF from HFrEF. This is clinically important, as HFpEF is driven by systemic inflammation, endothelial dysfunction, and ventricular stiffness, while HFrEF is characterized by neurohormonal activation and myocardial injury. Recent trials have demonstrated benefits of SGLT2 inhibitors, mineralocorticoid receptor antagonists, and Finerenone in HFpEF.² These phenotype-specific strategies are not reflected in the wheel, which risks promoting uniform treatment for heterogeneous conditions.

RESISTANT HYPERTENSION: BEYOND PHARMACOLOGY

Resistant hypertension requires a systematic approach that extends beyond drug escalation. The wheel remains pharmacocentric and omits device-based strategies. Renal sympathetic denervation has demonstrated sustained BP reductions in multiple sham-controlled trials.³ In selected patients, baroreflex activation therapy has also shown benefit.⁴ The absence of these options limits the wheel’s relevance in refractory cases.

OMISSION OF NEWER THERAPIES

Emerging agents such as brexrostat, an aldosterone synthase inhibitor, have shown significant BP reductions in resistant hypertension but are not included.⁵ More concerning, Finerenone is depicted as contraindicated in CKD, despite being approved for diabetic CKD down to an eGFR of 25 mL/min/1.73 m² with potassium monitoring.⁶ This misclassification risks discouraging evidence-based therapy.

MULTIMORBIDITY: A MISSING DIMENSION

Most hypertensive patients have more than one comorbidity. Treating each condition in isolation does not reflect clinical reality. Multimorbidity requires prioritization of therapies, balancing competing risks, and minimizing polypharmacy. The wheel provides no guidance for such scenarios.

LIMITED GRANULARITY IN PULMONARY DISORDERS

Chronic obstructive pulmonary disease (COPD), asthma, obstructive sleep apnea, and pulmonary hypertension differ markedly in pathophysiology and treatment interactions. Cardioselective β -blockers are often safe in COPD, but not in asthma. These nuances are not captured.

SEMANTIC INACCURACY OF BEING “CONTRAINDICATED”

The outer red ring is labeled “contraindicated”, yet many agents are only relatively contraindicated or require monitoring. Absolute contraindication implies a drug should never be used, which is misleading. A term such as “use with caution” would be more accurate.

CONCLUSION

The therapeutic wheel is a valuable educational concept but oversimplifies the complexity of contemporary hypertension management. Greater phenotypic granularity, inclusion of special populations, resistant hypertension pathways, interventional strategies, and accurate drug classification are required for it to function as a robust, evidence-aligned decision-support tool.

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