

World Hypertension Day 2024 and unveiling the hidden challenge: Endocrine hypertension

Fariduddin M

Md. Fariduddin, Professor, Department of Endocrinology, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh; Email: dr.md.fariduddin@gmail.com, Cell no. +8801711847389

May 17th World Hypertension Day, observed annually to serve as a global platform to increase awareness and understanding of hypertension, a major risk factor for cardiovascular diseases, stroke and renal failure. Hypertension is a silent killer and the leading cause of premature death globally. It affects over 1.28 billion people worldwide, with nearly half of those affected unaware of their condition. In the South East Asia region, >35% of the adult population have hypertension. According to a recent study, the prevalence of hypertension in Bangladesh is about 28% (12% previously diagnosed, 16% undiagnosed).¹ Unfortunately, three-quarters of the world's hypertensive population reside in low and middle-income countries where healthcare access is limited. There is widespread inertia and unawareness regarding the management of hypertension. The theme for World Hypertension Day 2024, "Measure Your Blood Pressure, Control It, Live Longer," emphasizes the critical need for regular monitoring and effective management of blood pressure to enhance health outcomes worldwide. Awareness, early detection and effective management are our best tools in combating hypertension.

Among its diverse etiologies, endocrine hypertension, the leading cause of secondary hypertension, is particularly insidious due to its complex origins and frequently undiagnosed nature. As we deepen our understanding of hypertension, it is imperative to shed light on endocrine-related causes and advocate for more vigilant detection and management strategies.

Endocrine hypertension arises from disorders of the endocrine system that lead to dysregulation of blood pressure. The most common cause is primary aldosteronism, prevalent in 4.6-13% of uncontrolled hypertension and up to 30% of resistant hypertension. Primary aldosteronism and pheochromocytoma present primarily with uncontrolled hypertension. Various other endocrine diseases like Cushing syndrome and thyroid disorders might lead to hypertension, although each of them entails distinct clinical presentations.

The diagnostic approach to endocrine hypertension has

significantly evolved, driven by advances in imaging and biochemical testing. Screening for primary aldosteronism, for instance, involves measuring plasma aldosterone renin ratio, followed by confirmatory tests such as saline suppression test or captopril challenge test. Despite being technically challenging, adrenal venous sampling remains the gold standard for subtype differentiation in primary aldosteronism. For pheochromocytoma, most commonly plasma free metanephrines (sensitivity 97%, specificity 92%), 24-hour urinary fractionated metanephrines (sensitivity 85%, specificity 95%) and urinary vanillylmandelic acid (VMA; sensitivity 65%, specificity 88%) are used.² Imaging modalities like CT scan, MRI, and functional imaging with MIBG or PET scans further aids in tumour localization.

Effective management of endocrine hypertension hinges on the accurate identification of the underlying cause. Surgical resection remains the definitive treatment for conditions like primary aldosteronism (adenoma) and pheochromocytoma. For non-surgical candidates or bilateral adrenal hyperplasia, medical management, including mineralocorticoid receptor antagonists (e.g., spironolactone), is employed.

As our understanding deepens and diagnostic techniques advance, the potential to improve outcomes for patients with endocrine hypertension grows. Several challenges persist despite this progress. The heterogeneity of clinical presentations often leads to underdiagnosis or misdiagnosis. There is also a need for more accessible and cost-effective diagnostic tools, particularly in resource-limited settings. Future research should focus on refining diagnostic criteria, developing novel biomarkers, and exploring the genetic underpinnings of endocrine hypertension. Additionally, interdisciplinary collaboration among endocrinologists, cardiologists, and primary health care physicians is vital for comprehensive patient care. An endocrine hypertension clinic, like that in BSMMU, can be set up in different medical colleges under the leadership of Endocrinologists to serve this hidden, complicated, but

treatable condition. ACEDB, the voice of Endocrinologist of Bangladesh, aims to provide endocrine services to the people of Bangladesh. In collaboration with the cardiologists, ACEDB arranged a successful seminar on the occasion of World Hypertension Day, 2024 to highlight the magnitude of endocrine hypertension and its management.

References

1. Hossain A, Suhel SA, Chowdhury SR, Islam S, Akther N, Dhor NR, et al. Hypertension and undiagnosed hypertension among Bangladeshi adults: Identifying prevalence and associated factors using a nationwide survey. *Front Public Health* 2022;10:1066449. DOI: 10.3389/fpubh.2022.1066449.
2. Lenders JW, Duh QY, Eisenhofer G, Gimenez-Roqueplo AP, Grebe SK, Murad MH, et al. Pheochromocytoma and paraganglioma: an endocrine society clinical practice guideline. *J Clin Endocrinol Metab* 2014;99(6):1915-42. DOI: 10.1210/jc.2014-1498.