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Diagnostic Dilemma of Primary Headache: Bangladesh Perspective

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PHeadache is one of the most common neurological complaints in both outpatient and emergency settings. While many headaches are benign and self-limiting, a significant proportion may indicate underlying neurological disorders. In Bangladesh, the diagnosis of neurological headaches remains a complex and often overlooked challenge due to overlapping clinical presentations, a shortage of trained specialists, and insufficient access to advanced imaging and laboratory diagnostics.

Globally, it is estimated that nearly 50.0% of the adult population experiences at least one headache annually, with tension-type headache and migraine being the most prevalent[1]. In Bangladesh, recent studies indicate a rising burden of primary headaches, particularly among younger adults and women[2]. However, secondary headaches caused by neurological conditions such as intracranial hemorrhage, infections (e.g., tubercular or bacterial meningitis), tumors, hydrocephalus, or vascular malformations are often underdiagnosed or misclassified due to limited awareness and diagnostic capacity.

The diagnostic dilemma arises primarily because primary and secondary headaches can present with similar features, especially in the early stages. For instance, migraines may mimic symptoms of raised intracranial pressure, and tension-type headaches may overlap with early signs of meningitis or brain tumors. The International Classification of Headache Disorders (ICHD-3) provides a structured approach to headache classification[3], but such guidelines are rarely followed in resource-limited or rural healthcare settings in Bangladesh.

Moreover, physicians in primary care often rely solely on history-taking without performing neurological examinations or neuroimaging, leading to missed or delayed diagnoses. Alarm symptoms such as sudden onset, change in pattern, headache with fever or focal deficits, or associated seizures are not always well recognized or acted upon with timely referral to specialists. The lack of MRI and CT scan facilities outside metropolitan areas further compounds the challenge, while high costs and long waiting times cause additional delays.

A significant barrier in the diagnosis of neurological headaches in Bangladesh is the shortage of neurologists. According to a WHO report, there are only about 1 neurologist per million people in Bangladesh[4], which is far below the global average. As a result, patients presenting with complex headache syndromes such as those associated with demyelinating diseases, cerebral venous sinus thrombosis (CVST), or intracranial infections are frequently mismanaged or diagnosed late. This delay not only increases morbidity but may also lead to mortality in cases such as subarachnoid hemorrhage or encephalitis.

Another important concern is the underdiagnosis of headache disorders in women. Cultural and gender norms often lead to the trivialization of women's pain and symptoms, resulting in delayed or inadequate evaluation. For example, idiopathic intracranial hypertension (IIH) which predominantly affects young, obese women is often mistaken for simple migraine or stress related headache.

Improving the diagnostic accuracy of neurological headaches requires strengthening both human resources and infrastructure. Training primary care physicians and general practitioners in basic neurological assessment and red-flag identification is crucial. The development of headache clinics, tele-neurology consultation services, and mobile diagnostic units can help bridge the gap between rural and urban healthcare.

Establishing headache registries and encouraging epidemiological research can guide public health planning and identify regional trends. In addition, introducing low-cost neuroimaging facilities in district hospitals and integrating them into national health schemes could reduce diagnostic delays.

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Collaboration between neurologists, radiologists, general physicians, and public health policymakers is essential to build a multidisciplinary approach. The use of standardized headache diaries, screening tools such as the SNOOP mnemonic (Systemic symptoms, Neurological signs, Onset sudden, Older age, Previous headache history), and telemedicine can serve as powerful, low-resource strategies for improving diagnosis[5-6].

The diagnostic dilemma of neurological headaches in Bangladesh is multifactorial-rooted in clinical overlap, insufficient diagnostics, and systemic healthcare gaps. While the burden continues to grow, a comprehensive approach that includes education, infrastructure improvement, and strategic policy planning is needed to bridge the diagnostic gap. Early recognition and management of neurological headaches not only reduce disability but also improve quality of life and decrease long-term healthcare costs. Prioritizing this issue within the national health strategy is both urgent and necessary.

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