

India is a large country housing one billion people. The science of Neurology took roots in large cities of India over 50 years ago. Physicians trained in various parts of the world, in particular the UK, returned to practice Neurology as a part of Internal Medicine in their motherland, rapidly establishing the specialty of Neurology. The specialist training courses in Neurology were established in the late seventies and presently, approximately one hundred neurologists are trained

every year. Sub specialty training is popular and the last decade has seen emergence of neurologists willing to work exclusively in the areas of epilepsy, strokes, movement disorders, neuromuscular diseases etc. The experience of workers in the field has suggested that the disease spectra are in general similar to other parts of the world; there are local peculiarities as well. This series of six parts will elucidate the patterns of neurological diseases seen in India.



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Headache in India

Headaches are as much a problem in India as elsewhere in the world. Given the population load and the fact that most headaches seen in practice are underdiagnosed and undertreated, the burden of headache is significant. In this modern era, when imaging studies are easily available, most secondary headaches are identified and managed correctly. Management of secondary headaches depends on the causative factor and the strategies are the same worldover. Amongst the secondary headaches, those due to intracranial granulomas, neurocysticercosis, meningeal infections and cerebral venous thrombosis are probably a little more common in the Indian setting.

Headache mismanagement therefore generally pertains to primary headaches where imaging studies are normal and investigations do not reveal an underlying cause. This article is a brief review of the Indian primary headache scene where the dilemmas are different and regional variations have an important role to play. It lists some of the more important contributions to headache literature from India.

In the light of numerous other medical problems that loom large, headache management in India is not given the priority it deserves in the health-care system. Because of limited teaching on 'headache' in medical schools and numerous additional barriers, headache diagnosis and treatment are often sub-optimal. Headache Medicine is still not a recognized sub-special-

ity in India. Myths and misunderstandings abound and headache patients end up being seen by many different specialists, each one of whom looks at the problem through the window of their own speciality. For all these reasons, headache patients in India do not receive adequate sympathy, care and attention. Migraine is the main cause of headache burden worldwide. Even though there may not be too many variations in the clinical presentations of primary headaches across different regions of the world, treatment outcomes may vary depending on differences in genes, geography and environment. Attitudes, awareness and health-care policies all have an influence on the way headaches are perceived and managed.

India is located to the north of the equator and the heat and humidity and the numerous other migraine triggering factors all contribute to more frequent headaches that may not easily respond to medical treatment. There are many additional barriers to headache care in India. With a population of more than one billion, India has 16% of the world population and therefore health priorities keep changing. Low literacy levels make it more difficult for patients to understand the treatment plan and expectations are always high.

The health-care system in the country is also not geared to supporting effective headache treatment. Less than 5% in India seek private care or managed care. With a significant part of the population in the lower income group it is difficult for patients to seek treatment for a recurrent problem like headache. Financial constraints and fixed notions lead to poor compliance. 25% of the Indian population lives in the cities and 75% in villages. Growing urbanization leads to infrastructural breakdown and increase in stress levels. Most of the rural population tries alternative treatment methods such as homoeopathy, ayurveda and unani. Physicians do not understand the true misery of headaches and time constraints and overcrowded clinics add to the problems of patients with headache. Headache diaries are not maintained, disability levels are not evaluated and burdens cannot be assessed.

Some important headache literature from India has been included here. There have been no standardised population based epidemiological studies that can be quoted as indicative of the true prevalence. Gowrie-Devi et al (5) did an epidemiological study of neurological



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Figure 1: 'In the face of many other priorities...'

Figure 2: 'Migraine Triggers peculiar to India'



Table 1: Patient-related barriers

Myths and misconceptions

- Headaches are caused by a defect in visual acuity
- Headaches are caused by emotional upset
- No permanent cure, so you might as well live with it
- All headaches are caused by sinusitis
- Headaches are caused by acidity or constipation

Delays in the seeking of treatment

- Self medication
- Fear of side-effects of allopathic drugs
- Trial with alternative treatment options

Poor compliance

- Financial constraints
- Normal CT-scan results lead to the misapprehension that all is well

Inability to understand migraine

- Frequent change of doctors
- Poor control of triggers
- Wrong levels of expectation

need more tertiary care clinics and lay support groups. The health care system should be modified to include headache care for all.

References

1. Ravishankar K. Headache pattern in India: A headache clinic analysis of 1000 patients. *Cephalalgia* 1997;17:316-17. 1.
2. Shah PA, Nafee A. Clinical profile of headache and cranial neuralgias. *J Assoc Physicians India*. 1999 Nov;47(11):1072-5.
3. Shukla R, Khanna VK, Pradeep S, Husain M, Tandon R, Nag D, Dikshit M, Srimal RC, Seth PK. Platelet 3H ketanserin binding in migraine. *Cephalalgia*. 2001 Jun; 21(5):567-72.
4. Shukla R, Barthwal MK, Srivastava N, Nag D, Seth PK, Srimal RC, Dikshit M. Blood nitrite levels in patients with migraine during headache-free period. *Headache*. 2001 May; 41(5):475-81.
5. M. Gourie-Devia G, Gururajb P, Satishchandras D.K. Subbakrishnac Prevalence of Neurological Disorders in Bangalore, India: A Community-Based Study with a Comparison between Urban and Rural Areas. *Neuroepidemiology* 2004;23:261-8.
6. Garg RK, Kar AM, Singh MK. Prednisolone-responsive headache in patients with solitary cysticercus granuloma and seizures. *Headache*. 2004 Apr;44(4):365-9.
7. Chakravarty A. Chronic daily headaches: clinical profile in Indian patients. *Cephalalgia*. 2003Jun;23(5):348-53.
8. Chakravarty A. Chronic daily headache in children and adolescents: a clinic based study from India. *Cephalalgia*. 2005Oct; 25(10):795-800.
9. Chakravarty A, Mukherjee A, Roy D. Trigeminal autonomic cephalalgias and variants: clinical profile in Indian patients. *Cephalalgia*. 2004Oct;24(10):859-66.
10. Ravishankar K. Barriers to headache care in India and efforts to improve the situation. *Lancet Neurol*. 2004Sep;3(9):564-7.
11. Ravishankar K. 'Hair wash' or 'head bath' triggering migraine - observations in 94 Indian patients. *Cephalalgia*. 2006 Nov;26(11):1330-4.
12. Panda S, Tripathi M. Clinical profile of migraineurs in a referral center in India. *J Assoc Physicians India*. 2005Feb;53:111-5.
13. Gupta R, Bhatia MS. A report of cranial autonomic symptoms in migraineurs. *Cephalalgia*, 2006;27:22-8.

Table 2: Physician-related barriers

Wrong diagnosis

Low emphasis of headache in medical curriculum

Wrong treatment

- Faulty drug choice
- Suboptimum dose
- Inadequate duration of prophylaxis

Wrong referral

- Lack of effort to educate patients
- Under-use of non-pharmacological strategies

Table 3: Regional barriers

- Overpopulation
- Low literacy
- Low income
- Growing urbanisation
- Cultural and social diversity
- Triggers peculiar to India
- Inadequacies of the health-care system
- Alternative therapies

disorders in Southern India which included evaluation of patients with headache. Ravishankar et al¹ analysed the pattern of headaches seen at a tertiary referral centre in India. Out of 1000 patients who presented with headache, 86% had primary headaches that were classifiable, 11% were unclassifiable and 3% had secondary headaches. Of the primary headaches, 55% had migraine, 28.3% had tension-type headache, 22.2% had cluster headache and 0.5% had miscellaneous primary headaches. Shah et al² studied 2982 patients from the Kashmir Valley and analysed the various headache patterns and cranial neuralgias. They found Ramadan fasting to be a significant factor for precipitating migraines. Shukla et al^{3,4} investigated blood nitrite levels and showed that platelet aggregation response and blood nitrite levels were not significantly altered after an attack in patients with migraine. They also evaluated platelet ketanserin binding in migraine patients. Garg et al⁶ have reported on patients with solitary cysticercus granuloma and seizures who also complained of disabling headache. 16 patients with new onset disabling headache and solitary cysticercus granuloma with seizures were treated with a short course of prednisolone and obtained long lasting relief. Chakravarty A^{7,8} analysed Chronic Daily Headache (CDH) in adults and children and studied the prevalence of trigemino-autonomic cephalalgias

(TACs)⁹ seen at their centre in the eastern part of India. They found that Chronic Daily Headache (CDH) remains relatively unexplored and analgesic overuse is often not recognized. The average dose of analgesic implicated in CDH seems much less than what is reported in the West. They found that TACs are relatively uncommon in their centre.

Ravishankar¹⁰ reported on barriers to headache care in India and the efforts that are needed to improve the situation. The barriers were grouped as patient related, physician-related and regional. Local problems that pertain to headache management, the unusual triggers seen in India and the inadequacies of the health-care system have been outlined. Besides the established triggers that are better known, Ravishankar¹¹ has described hair-wash or head-bath as an unusual trigger that is not seen in the West.

Panda et al¹² have reported an observational study on the clinical characteristics of migraineurs from India. They reported a low frequency of patients with a positive family history of headache. Gupta et al¹³ found that 73.1% of their migraine patients had autonomic features.

Special efforts are therefore needed to tackle the headache problem in India. Awareness and education on headache needs to improve and insurance agencies must recognize headache as a valid biological disorder. We