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### **Migraine – a suitable case for treatment?**

Headache disorders are common, with a lifetime prevalence of over 90% in all populations where they have been measured. So common, in fact, that a Global Campaign to Reduce the Burden of Headache was launched in 2004 to educate health care providers, the general public, and national governments to recognize that headache disorders are not trivial, that effective treatments are available, and that the costs of treatment are small in comparison to lost productivity in the workplace (Steiner 2004). Thus, although headache rarely signals serious underlying disease, it is one of the most frequent causes for consulting family practitioners and neurologists – 1 in 6 and 1 in 3 respectively. In many countries, however, headache disorders are regarded as unimportant and self-limiting and not as proper disease entities. Allocation of health care resources is often minimal, despite the consensus conference of the American and International Headache Societies conclusion that migraine, for example, is under-diagnosed and under-treated throughout the world.

Although tension-type headache is the most prevalent of the headache disorders, migraine is the most disabling (Rasmussen 1995). Migraine is a chronic neurological disorder characterized by recurrent attacks of headache and other symptoms, which may last for up to 3 days. The pain is moderate to severe and is accompanied by phonophobia, photophobia, nausea, and vomiting. Prodromal symptoms may include somnolence and mood changes, while some patients may experience aura which is a complex of focal neurological symptoms including visual disturbances, numbness, paraesthesia and speech difficulties. The current International Classification of Headache Disorders (IHSCC 2004) provides diagnostic criteria for up to 7 subtypes of migraine. It mostly affects people of working age but also occurs in older adults and children. European and American studies have shown a prevalence of about 18% among females and 6.5% among males, aged 12 years and older. Similar patterns are seen in Central and South America, but migraine appears to be somewhat less common in Asia and Africa (WHO/WFN 2004). The universally higher rate in women, at about 2–3 times that in men, is probably hormonally driven. The burden of migraine varies, with some individuals experiencing many more attacks and associated disorders while others may have no more than a monthly attack (Bigal et al 2004; Rasmussen 1995). At the top end, 35% of American women with migraine experience 1–4 severe attacks per month while a further 25% of them experience 4 or more severe attacks per month. Migraine places a considerable burden on the sufferer, their family and friends, and upon society as a whole, with 80% of American migraine sufferers reporting some form of disability. The economic and public health burdens of migraine are significant, and include reduced work and school productivity; lost work productivity alone is estimated to cost about US\$13 billion annually in the USA (Hu et al 1999). Extrapolation for migraine prevalence and attack incidence data suggest that 3000 migraine attacks occur daily for each million of the general population, placing migraine 19th among all causes of years lost to disability (YLDs) (WHO 2001).

Proper management of migraine is therefore of paramount concern, and treatment should be optimized for individual patients. Different types of medicines are available for the pharmacological treatment of migraine, and can be seen as preventive,

acute or combined treatments. In this issue of *Neuropsychiatric Disease and Treatment*, all three approaches to migraine management are reviewed. Garza and Swanson (2006) review the prophylaxis of migraine, an approach to be considered whenever migraine significantly interferes with the patient's daily activities despite acute treatment, when acute treatments have failed, are overdosed or are associated with adverse effects, and where rare migraine conditions can potentially cause neurological damage. Evidence-based guidelines have stated the goals for preventive treatment to be (1) to reduce attack frequency, severity, and duration; (2) to improve responsiveness to treatment of acute attacks; and (3) to improve function and reduce disability. The US Headache Consortium (USHC 2000) has issued treatment guidelines after extensive evidence-based reviews, grouping medications with proven high efficacy and mild to moderate adverse effects (amitriptyline, valproate, propranolol, timolol), those with lower efficacy and mild to moderate adverse effects (other beta-blockers, calcium channel blockers, NSAIDs, fluoxetine, gabapentin), and the remainder with limited or unproven efficacy or limiting adverse effects. Since that evaluation of the evidence available up to 1997, a number of newer agents have become available, including the anti-epileptic topiramate which now has regulatory approval in Europe and the USA for migraine prevention. D'Amico and colleagues (2006) review the evidence base for topiramate, concluding that slow titration to the optimum dose gives high responsiveness and good tolerability. In view of the lack of weight gain and of major contraindications, they recommend topiramate as a first-line option for migraine prophylaxis.

There are a number of abortive therapy options for treating acute attacks of migraine, including NSAIDs, non-opiate analgesics, and combination analgesics, but the favored options today are the migraine-specific triptans. Láinez (2006) reviews one of the more recent introductions, rizatriptan, and suggests that it is at least as effective as other migraine-specific agents in the acute treatment of migraine but with a more consistent long-term efficacy across multiple attacks. Combined treatment with triptans and NSAIDs seems to be associated with better efficacy

than either type of agent alone especially in patients with many disabling attacks and low response to a single agent. Krymchantowski (2006) reviews the potential of various combinations before concluding that the best evidence is available for the combination of sumatriptan and naproxen.

Treatment of migraine has come a long way in recent years. The introduction of the first migraine-specific abortive agent, the 5-HT<sub>1B/1D</sub> agonist sumatriptan, considerably enhanced our knowledge of the pathophysiology of migraine, and enhanced the quality of life for many migraine sufferers. Acute treatment is now fairly satisfactory for many patients, and even the difficult cases can respond to a combination of triptans and NSAIDs. Better agents for prophylaxis are still needed, and will probably emerge from a deeper understanding of exactly how our current agents work and from our growing knowledge on the neurophysiology of migraine attacks.

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