

Hemiplegic Migraine

This fact sheet is intended as a general introduction to hemiplegic migraine experienced by adults.

What is hemiplegic migraine?

Hemiplegic migraine is referred to as a “migraine variant”. The word hemiplegic simply means paralysis on one side of the body. A person with hemiplegic migraine will experience a temporary weakness on one side of their body as part of their migraine attack. This can involve the face, arm or leg and be accompanied by numbness, or pins and needles. The person may experience speech difficulties, vision problems or confusion. This can be a frightening experience for the individual as these symptoms are similar to those of a stroke. This weakness may last from one hour to several days, but usually it goes within 24 hours. The head pain associated with migraine typically follows the weakness, but the headache may precede it or be absent.

What causes the symptoms of hemiplegic migraine?

To understand this, it is important to look at the mechanism of hemiplegic migraine. The brain and nervous system depend on a combination of electrical and chemical signals to function. When a nerve impulse (electrical) of sufficient strength passes down from one nerve cell towards another, it opens a so-called ‘channel’ which acts like a ‘gate’. This process releases neurotransmitters (or chemical messengers) which contact the neighbouring cells and tell them how to respond. If a channel in the brain is not working properly, neurotransmitters, such as serotonin, may be released in an abnormal way. In the case of hemiplegic migraine, the way the channel dysfunctions is known to have a role in the condition.

Types of hemiplegic migraine

There are two types of hemiplegic migraine – **familial hemiplegic migraine (FHM)** and **sporadic hemiplegic migraine (SHM)**.

Familial Hemiplegic Migraine

Familial hemiplegic migraine (FHM) is defined as migraine attacks occurring in two or more people in the same family who experience weakness on one side of the body as a symptom with their migraines. On average 50% of children who have a parent with hemiplegic migraine will develop this disorder.

At least three different genes have been implicated in FHM. In half of the families where FHM occurs, a gene with a defect on chromosome 19 has been identified. This causes the related calcium channel to work incorrectly from time to time, and when it does a series of biochemical changes result in a migraine attack. For other families chromosome 1 is implicated which alters the behaviour of a channel involved in cell energy and in still others a sodium channel gene on chromosome 2 is altered. Even these do not account for all cases so more genetic causes will be found during future research.

Sporadic Hemiplegic Migraine

If someone experiences all the physical symptoms of FHM but doesn't have a known familial connection they are diagnosed as having sporadic hemiplegic migraine (SHM). The cause of

SHM is unknown, some are due to new or so called ‘sporadic’ gene mutations.

Research has shown that people with SHM usually experience all four of the typical aura symptoms – visual, sensory, aphasic and motor symptoms – during their attacks. It was reported in the people who were studied that the motor weaknesses were always one sided and more often experienced in the upper limbs. For two thirds of people the symptoms lasted around an hour; whilst only 8% experienced this weakness for more than a day. None experienced the one sided weakness in their body without experiencing other symptoms as well, and the most common of these accompanying symptoms was visual disturbance. All experienced the headache of the migraine.

Getting a Diagnosis and Treatment

When symptoms of either type of hemiplegic migraine occur it is vital that a firm diagnosis be made and that you therefore seek specialist medical advice to explain the sudden onset of one sided weakness or numbness. The SHM and FHM diagnosis must always be based on a thorough evaluation of the symptoms as experienced by the individual and include a full family history.

Specialist advice will also ensure that you avoid embarking on the wrong treatment regimen. Triptans, for example, are best avoided during the aura phase of SHM or FHM, despite often being prescribed for the more common types of migraine.

There is little conclusive research as yet to establish a single best course of drug treatment for hemiplegic migraine. What has so far been published, and clinical experience also suggests, is that treatment with either flunarizine or topiramate may be the best option.

Useful contacts

- **World Headache Alliance** Website: www.w-h-a.org