

Headache Treatment in Children (2002)

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Goals of therapy in children with headache are similar to those in adolescents and adults. Interestingly, however, Lewis in 1996 found in a survey study that children with headaches have three primary concerns:

- 1) What is the cause of the headache?
- 2) What will make it better?
- 3) Is a life-threatening illness present?

Therefore, assuring the patient and family that the headache is benign must be a primary goal. Once secondary causes of headache are excluded, a reduction in frequency and the discovery of a successful antidote to moderate and severe head pain are key goals.

As in adults and adolescents, early treatment of migraine using effective dosage is the best approach. Use of acute interventions should be limited to 2-3 times per week to avoid rebound. The addition of anti-nauseant medication is crucial in some children. Non-specific agents useful in treating acute migraine include acetaminophen, NSAID's, opioids and isometheptene. Both Ibuprofen (Hamalainen 1987) and acetaminophen have been shown to be effective in childhood migraine and tension-type headache. (Aspirin is avoided due to the risk of Reye's syndrome.) Opioids are surprisingly ineffective in non-sedating doses and of course have significant negatives.

"Specific" antimigraine agents include ergotamine and DHE, but triptan medications have largely supplanted these. While triptans have not been studied systematically in children under 13, most headache specialists feel they are highly effective and safe in the vast majority of children with migraine. Dosages are not clear but suggested dosages for the available triptans are offered in Table 1. Table 2 lists suggested dosages of antiemetics. For more precise dosing, consult pharmacological resources. (None of these medications are approved by the FDA for treatment of headache in children).

Table 1 Triptans

Sumatriptan (Imitrex) 6mg IM, 20 NS, 25-50 po
Naratriptan (Amerge) 2.5 po
Rizatriptan (Maxalt) 5 mg po
Zolmitriptan (Zomig) 2.5 mg po
Almotriptan (Axert) 12.5 mg po

Table 2 Antiemetics

Promethazine (Phenergan) 25-50 mg (1mg/kg) po/pr/IM
Prochlorperazine (Compazine) 2.5-5 mg po/pr, 10 mg IV
Metoclopramide (Reglan) 5-10 mg po/IM/IV
Ondansetron (Zofran) .15 mg/kg

The addition of prophylactic medication is sensible in children who:

- 1) experience headaches more than twice a week,
- 2) do not respond well to analgesic/abortive options,
- 3) have hemiplegic migraine or prolonged aura or
- 4) suffer from significant reduction in quality of life due to headaches.

To assess effectiveness of prophylactic medications, an accurate headache log is essential. Patient and parents must be educated about medication usage and adverse effects, analgesic rebound, and expectations for treatment. An adequate treatment trial generally requires at least 2-4 weeks of treatment and often even longer.

The best pharmacological options for prophylaxis of primary headaches in children are cyclic antidepressants, cyproheptadine, anticonvulsants, beta-blockers, calcium channel blockers, and NSAID's.

SSRI's can be useful in selected cases. Pizotifen, a serotonin antagonist which is unavailable in the U.S., has been recommended by a number of authors.

Useful agents and doses are summarized in Table 3. (Again, none are FDA-approved for use for childhood headache prophylaxis.)

Table 3 Prophylactic Headache Medication in Children

Amitriptyline, Nortriptyline .2-2 mg/kg/d
Cyproheptadine (Periactin) 4-12 mg/d
Valproate (Depakote) 10-50 mg/kg/d as tid
Gabapentin (Neurontin) 100-600 mg tid
Carbamazepine (Tegretol) 10-35 mg/kg/d as tid
Propranolol (Inderal) 1-3 mg/kg/d as bid
Atenolol (Tenormen) 12.5-50 mg/d as bid
Flunarizine 5 mg/d
Verapamil 20-160 mg/d as tid

Non-pharmacological treatment of headache in children has been studied, but only a few modalities have been shown to be effective. These include: sleep regulation, relaxation training, biofeedback, cognitive therapy, and behavioral therapy. However, other modalities, including exercise, acupuncture and TENS, show promise.

When treating children with migraine, TTHA, and CDH, co-morbid illnesses must be identified and addressed. Depression, anxiety, sleep disturbances, ADHD, and family & social stresses need to be understood and improved if headaches are to be successfully treated. Psychiatric and psychological consultation can be invaluable – but often are avoided because of reluctance on the part of parents, teachers, and physicians.

The special case of a child with persistent severe headache is challenging. Mechanisms differ but many children respond to parenteral DHE, parenteral antiemetic medication, or sedative therapy with benzodiazepines or even barbiturates. Daily opioid therapy can be considered as a last resort with the aim of tapering and discontinuing as soon as feasible.