

James A. Charles

Almotriptan in the acute treatment of migraine in patients 11–17 years old: an open-label pilot study of efficacy and safety

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J.A. Charles (✉)
Department of Neurosciences,
New Jersey Medical School,
185 S Orange Ave., Newark,
NJ 07103-2714, USA
e-mail: jamesacharlesmd@aol.com
Tel.: +1-201-858-2457
Fax: +1-201-858-1053

Abstract The objective was to investigate the safety and efficacy of almotriptan in patients aged 11–17 years old with acute migraine. Fifteen patients aged 11–17 with a history of migraine with or without aura were treated with almotriptan. Reduction in headache severity, disability and adverse effects were studied. Almotriptan in doses ranging from 6.25 to 12.5 mg was well tolerated. There were virtually no adverse effects except for one case of transient mild stiffness. Of the 15 patients, only 2 demonstrated no

efficacy without adverse effects. In the other 13 patients, not only was almotriptan effective, but again, no significant adverse effects were reported. Almotriptan is probably safe and effective in patients aged 11–17. This small open-label pilot study should support the feasibility of a large randomised controlled study to demonstrate tolerability and efficacy of almotriptan in children and adolescents with episodic migraine.

Key words Almotriptan • Migraine • Adolescent • Children • Triptan

Introduction

The prevalence of migraine in children between the age of 3 and 8 is about 3% and adolescents between 10%–19% [1]. Migraine headaches can have adverse effects on the lives of children and adolescent sufferers. These include impaired school performance, poor attendance, and diminished participation in extracurricular activities and social life. All can adversely affect the growth and development of adolescents [1, 2]. Despite the fact that migraine is a real debilitating entity in this age group, there is no Food and Drug Administration (FDA)-approved abortive triptan therapy in migraine sufferers under the age of 18. Therefore, there is a clear and important need for studies to identify effective and well tolerat-

ed abortive triptan migraine-specific therapies in adolescent migraine sufferers.

Several studies have been published in the use of triptans in children and adolescents. Nasal sumatriptan has been shown to be effective and safe in 5–12-year-old children [3, 4]. Rizatriptan has been shown to be effective and safe for the acute treatment of migraine in adolescents [5]. Although zolmitriptan was found to be similar to placebo in efficacy, it was found to be well tolerated and safe in adolescents [6]. Naratriptan efficacy and safety was studied in adolescents [7].

Recent medical analyses [8, 9] have shown that all oral triptans at marketed doses are generally effective and well tolerated. Rizatriptan, almotriptan and eletriptan provide the highest likelihood of consistent success [8]. Almotriptan and naratriptan had lower rates of adverse

events in comparison to other triptans [9]. In a single study of eletriptan in adolescents, there was no statistical difference between eletriptan and placebo treatment groups [10]. As there are no formally published data or trials in almotriptan usage under the age of 18, it seemed reasonable to study its efficacy and safety in children and adolescents suffering from episodic migraine attacks.

Patients and methods

Fifteen patients, 14 female and 1 male, presented with a history of migraine with or without aura. Diagnosis was based on International Headache Society (IHS) criteria. All patients had normal brain imaging studies and no developmental, behavioural or medical problems. With the exception of two patients <50 kg who were given 6.25 mg almotriptan, the other patients, who weighed >50 kg, were administered 12.5 mg almotriptan. Abortive treatment was offered only if the headache frequency was no greater than 4 migraine attacks/month with a greater than 24-h headache-free interval in between attacks. Informed consent was obtained from the guardians in the presence of the patient. All guardians were told about the non-FDA indications of all triptans including the references in the literature supporting triptan efficacy and safety in the abortive treatment of migraine in patients aged less than 18 [3–7]. Severity of pain and duration of the attacks were recorded. Efficacy in terms of percent reduction of pain, speed of efficacy, ability to continue school or social activity, and adverse effects were also recorded.

This study was performed in accordance with the ethical standards of the 1964 Declaration of Helsinki.

Table 1 Patient profiles and treatment responses

	Age	Sex	Migraine Dx	Dose ^a (mg)	Treatment results ^b	Adverse effects
1.	11	F	(Visual) aura	6.25	Severe to mild in 2 h, pain free in 3h	None
2.	11	F	Without aura	12.5	Pain free in 2 h	None
3.	12	F	Without aura	12.5	Severe to mild in 2 h, pain free in 4 h	None
4.	12	F	Without aura	12.5	Pain free in 2 h	None
5.	13	F	Without aura	6.25	Pain free in 2 h	None
6.	14	F	(Visual) aura	12.5	Pain free in 2 h	None
7.	14	F	Without aura	12.5	Pain free in 2 h	None
8.	14	F	(Visual) aura	12.5	Pain free in 2 h	None
9.	15	M	(Visual) aura	12.5	Severer to mild in 2 h, pain free in 3 h	None
10.	15	F	Without aura	12.5	Ineffective	None
11.	16	F	Without aura	12.5	Severe to mild in 2 h, pain free in 3 h	Transient stiffness
12.	16	F	Without aura	12.5	Severe to mild in 2 h, pain free in 4 h	None
13.	16	F	(Visual) aura	12.5	Ineffective	None
14.	17	F	Without aura	12.5	Pain free in 2 h	None
15.	17	F	(Visual aura)	12.5	Pain free in 2 h	None

^a6.25 mg was used if <50 kg, otherwise 12.5 mg

^bNo patient required repeat dosing in <24 h; no patient required more than 4 doses/month. All responders were able to continue school and other activities without interruption

Results

In all 15 patients, no serious adverse effects were reported (Table 1). One patient described transient mild stiffness that was not significant and did not impair school or social performance. The efficacy of almotriptan was satisfactory in this patient. In two patients, almotriptan was ineffective but without any adverse effects. In the remaining 13 responder patients, almotriptan resulted in rapid onset of pain relief with no untoward effects. Redosing in <24 h did not occur in any patients. Headache frequency remained at <4 headache attacks per month throughout the study period, which is continuing after one year. All responders were able to continue school and other activities without interruption during almotriptan abortive treatment.

Conclusion

In this small almotriptan study, and in the rizatriptan, nasal sumatriptan and zolmitriptan studies, efficacy, safety and tolerability were equivalent to those of adults. This small pilot study revealed safety and tolerability of almotriptan in all of the subjects. Our study also suggests therapeutic efficacy for the acute treatment of migraine in the young migraine sufferer under the age of 18. Although this is a small open-label pilot study from which definitive conclusions cannot be drawn, the significance of

safety and efficacy of almotriptan offers an important therapy in the suffering of these young migraineurs. The adverse impact of migraine attacks in children and adolescents is often underappreciated by parents, teachers and even physicians. Devastating, repetitive migraine attacks are too often not satisfactorily attenuated or aborted by non-triptan therapies. They can lead to long-term academic, social and behavioural consequences. Frequent severe migraine attacks can result in central sensitisation, predisposing the young migraineur to increased future migraine episodes. In a recent study, the probability of successful treatment with aspirin and metoclopramide decreased as the severity of the headache-related disability increased. Among the most disabled 25% of patients, the attacks were controlled successfully with combination aspirin and metoclopramide in only 26% of patients. In patients with substantial disability, it is appropriate to pre-

scribe a triptan early in the course, which is in keeping with a stratified approach to care [9].

This study suggests that almotriptan is safe and effective in the treatment of young patients with acute migraine. A larger randomised placebo-controlled trial using a larger number of subjects is necessary to firmly establish the efficacy and safety of almotriptan in the young migraineur. However, until these studies have been completed, based upon our study, and the study of other triptans in the literature, it seems reasonable to utilise almotriptan abortive therapy in well selected patients who suffer from acute, debilitating, migraine attacks in the 11–17-year-old age group.

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