Efficacy of zolmitriptan nasal spray in management of acute migraine

Ramesh Bhattacharyya, Debal Laha and P.K. Gangopadhyay

Department of Neurology, Calcutta National Medical College & Hospital, West Bengal

KEY WORDS

Migraine
Zolmitriptan
CGRP

ABSTRACT

Background: Migraine is a very common neurological disorder. Treatment of acute attack of migraine is difficult. Non specific treatment includes various analgesic preparations having incomplete pain relieving effect with lot of side effects. Specific treatment for acute migraine attacks includes triptans and ergotamines. **Purpose:** The purpose of this study was to examine the efficacy of zolmitriptan nasal spray in management of acute migraine. **Methods:** In the present investigation zolmitriptan nasal spray is administered to patients having acute migraine attack. Visual analogue score was done every hour for headache and other symptoms. **Results:** Headache, photophobia, phonophobia, nausea and disability are relieved completely in 60%, 60%, 50%, 80%, 75% cases respectively and partially in 25%, 20%, 35%, 15%, 15% respectively. Mild side effects which occurred after treatment are well tolerated by 90% of patients. **Conclusion:** Zolmitriptan nasal spray not only reduces headache in 85% but it also reduces other symptoms of migraine like photophobia, phonophobia, nausea and disabilities.

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Corresponding Author:

Ramesh Bhattacharyya
Tel : +91-9433012639
E-mail : pkganguly100@yahoo.com

Introduction

Migraine is an episodic brain disorder that affects 15% of general population.¹ It is one of the very common referral to neurology clinic, highly disabling, costly and difficult to treat. Two types of treatment are available of which one is the treatment of acute attack. Another is for prophylaxis. Non specific treatment for acute attack includes aspirin, paracetamol, naproxen, ibuprofen, tolfenamic acid with or without antiemetic agents. Many patients suffer from 2 or more migraine attacks per month. Taking non specific analgesic more than 10 days per month can also produce drug induced headache. Moreover such drugs can also produce gastrointestinal (GI) intolerance. Specific treatments for migraine include ergotamine and triptans. Ergotamine is known to have higher incidence of nausea than triptans, however, its overuse can produce dreadful headache besides various vascular problems.

Triptans are very effective in acute migraine attack. Their pharmacokinetic features are excellent.² There are very few studies depicting efficacy, tolerability and side effects of zolmitriptan in acute migraine attack.

Methods

Our study group consisted of 137 migraine patients from Neurology out door of Calcutta National Medical College and Hospital. Migraine diagnosis was confirmed by neurology according to simplified diagnostic criteria established for migraine adapted from the Headache Classification Committee of the International Headache Society 2004.³

Those patients suffering from more than 3 months and having 2 or more attacks per month were recruited for this study and their headache and other symptom severity were assessed by visual analogue scale.⁴

At least 2 of	At least 1 of
Unilateral pain	Nausea / vomiting
Throbbing pain	Photophobia
Aggravation by movement	Phonophobia
Moderate and severe intensity	

Repeated attack of headache lasting 4-72 hour that have these features, normal physical examination and no other reasonable cause of headache. Ethical approval was obtained.

Demographic characteristic, symptoms incidence and number of attack per month before treatment of the study group are shown in table 1, 2, 3 respectively.

Those patients were excluded from the study that presented with hypertension ischemic heart disease, complicated migraine and multiple risk factors for coronary vascular disease,

Table 1: Demographic characteristics of study group

Male	35 (27%)
Female	95 (73%)
Age	4-50 years
Family history of migraine	91 (70%)
Migraine with aura	26 (20%)

Table 2: Profile of clinical symptoms

Photophobia	111 (86%)
Phonophobia	104 (80%)
Nausea / Vomiting	117 (90%)
Disability	117 (90%)

Table 3: No. of migraine attacks per month

No of attacks	Percentage
2	20%
3	18%
4	15%
5 or more	30%

pregnancy and nursing mothers. All patients were given prophylactic drugs if migraine attacks were more than 2 per month or episodes were disabling for more than 2 days. Zolmitriptan nasal spray was given within 6-8 hour of migraine attack when pain was moderate to severe headache. The dose was repeated after 2 hours if it was partially effective.

One spray is equivalent to 5 mg of zolmitriptan. Repeat VAS scoring was done every 1 hour and change of symptoms was analyzed. 2nd dose of nasal spray was given if there was partial improvement of headache. Maximum dose did not exceed 2 days/week. There were 7 patients that required withdrawal of drug due to high cost and side effects.

Results

Improvement of headache and other various symptoms associated with it including photophobia, phonophobia, nausea and disability were assessed and motor side effects recorded. Headache was found to be relieved completely in 60%, partially in 25%, photophobia completely in 60%, partially in 20%. Phonophobia was found to be relieved completely in 50%, partially in 35%. Nausea was found to be completely relieved in 80%, partially in 15%. Similarly, disability was found to be completely resolved in 75%, partially in 15%. In 80% of patient's headache improved within one hour. Recurrence within 24 hours was upto 30%, rebound headache of upto 30% and consistency (no recurrence within 24 hours) in 60% cases. 2nd dose of zolmitriptan did not improve symptoms further. Side effects included flushed sensation in 30% cases. Sensation of chest pressure was seen in 10%, with paresthesia in 10% and dizziness and weakness upto 20% while 5% patients required withdrawal of drugs due to side effects. We did not find any significant difference in migraine presenting with aura or without aura.

Discussion

Trigemino vascular system has a prominent role in migraine attack.⁵ It has been reported that there is sterile inflammation due to release of neuropeptides like calcitonin gene related

peptides (GRP Neurokin A and Substance P)⁶ that could be involved in the pathophysiology of migraine.

Triptans exert their treatment effects through presynaptic inhibition of peripheral trigemino vascular neurons (5HT_{1B}) and through central action on trigemino nociceptive pathways (5HT_{1D}).⁷ Blocking of the calcium gene related peptide (CGRP) and vasoconstriction are also possible mechanism of action of Triptans.⁸ Many patients have severe digestive symptoms precluding oral drug intake and a formulation of intranasal triptan has shown good efficacy.⁹ There are a few studies comparing efficacy of different type of triptans.¹⁰ Almotriptan at 12.5 mg was found to be effective for menstrually related migraine producing 48.4% pain free state and 2-24 hr of sustained pain free state in most patients.¹¹ Rizatriptan at 10 mg was found to be effective producing 51% pain relief rate for 2 hr and 22% pain freedom with a sustained pain relief rate of 38% as well as good tolerance.

Our study found that zolmitriptan nasal spray not only reduces headache (85%) but it also reduces other symptoms of migraine like photophobia, phonophobia, nausea and disability (80-90%) of patient and with mild side effects like unpleasant test, flushed sensation, chest pressure dizziness (10-30%). 2nd dose of zolmitriptan nasal spray was not found to improve headache and other symptoms much.

Limitations

This is not a double blind, randomized, controlled clinical trial. It is not a comparative study with other triptans. Comparing efficacy in gender and age groups has not been conducted here.

The articles complies with International Committee of Medical Journal editor's uniform requirements for the manuscripts.

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Table 4: Symptoms relieved rate (%)

Symptoms	Complete	Partial	No
Headache	60%	15%	25%
Photophobia	60%	20%	20%
Phonophobia	50%	35%	15%
Nausea	80%	15%	5%
Disability	75%	15%	10%

Table 5: Side effects of Zolmitriptan nasal spray

Flushed sensation	30%
Sensation of chest pressure	10%
Paresthesia	10%
Dizziness & weakness	20%
Unpleasant taste	30%