

# Impact of Amitriptyline on Migraine Disability Assessment Score

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## ABSTRACT

**Aim:** Migraine headache is a common disorder, several drugs have been tried as a prophylaxis to reduce the attacks of headache. Aim of this study is to see the impact of amitriptyline on quality of life in migraineurs using Migraine Disability Assessment Score.

**Materials and Methods:** In this study 300 patients of either gender who required prophylaxis for migraine without aura were selected. The patients were of the age group 18-60 years. The MIDAS questionnaire was administered to patients before starting treatment and again after 45 days prophylaxis. The improvement was noted.

**Statistical Analysis:** It is a prospective study where the severity of symptoms and 'quality of life' in patients is assessed before

and after treatment using mean, frequency, standard deviation and paired 't' test.

**Results:** A total of 300 patients were subjected to migraine prophylaxis with amitriptyline. The study showed female preponderance. The mean MIDAS score before and after treatment with amitriptyline was 11.6 and 9.4 respectively. The student's 't' test showed p-value of <0.005 which was significant.

**Conclusion:** Migraine prophylaxis with amitriptyline for a period of 45 days decreased the severity of symptoms and also reduction in days of migraine attacks. However the long term effects on quality of life could not be assessed. The study needs to be conducted in a large scale to evaluate the consistency and accuracy of the test.

**Keywords:** Amitriptyline, Midas

## INTRODUCTION

Migraine headache is a complex, recurrent headache disorder that is one of the most common complaints in otorhinolaryngology. Migraine is a common disabling primary headache disorder. In the United States, around 30 million people have 1 or more migraine headaches per year. This amounts to approximately 18% females and 6% males [1]. Approximately 75% of all migraine sufferers are women. The term migraine takes its origin from Greek word hemikrania. This term was translated in the Latin as hemigranea, which means migraine in French. According to the WHO, migraine is 19<sup>th</sup> among all causes of years lived with disability. It is defined as per ICHD-2 diagnoses. Migraine can be divided into two major sub-types.

- 1) Migraine without aura is a clinical syndrome characterised by headache with specific features and associated symptoms.
- 2) Migraine with aura is primarily characterized by the focal neurological symptoms that usually precede or sometimes accompany the headache [2].

Migraine without aura [3].

Recurrent headache disorder presenting with headache attacks lasting 4–72 hours. The headaches are unilateral in location, pulsating quality, moderate or severe intensity, aggravated by routine physical activity and associated with nausea, photophobia and/or phonophobia.

## Diagnostic criteria

At least 5 attacks, headache attacks lasting 4–72 hours, headache has at least two of the following characteristics - unilateral location, pulsating quality, moderate or severe pain intensity, aggravation by or causing avoidance of routine physical activity [Table/Fig-1].

**During headache at least one of the following:-** Nausea and/or vomiting, Photophobia and phonophobia. Hu and colleagues [4] showed that early treatment of an acute attack was associated with an overall reduced migraine burden for the event, and early treatment is commonly emphasized in clinical recommendations.

## Criteria for prophylaxis

If patient has 3 or more severe migraine attacks per month which do not respond adequately to abortive or symptomatic therapy,

the migraine attacks are severe enough to affect the quality of life, patient who has > 2 headaches/week that require pharmacologic intervention.

Few medications for prophylactic treatment have been subjected to adequate clinical trials. Good response may be defined as 50% reduction in the frequency or severity of migraines. Underlying principle is to use the least amount of medication with the fewest side effects to gain control of symptoms until the preventive treatment can be stopped. The medication should be continued for an adequate period, usually several months, and withdrawn slowly to prevent medication overuse headaches. Prophylactic treatment requires a major commitment by both the patient and the prescriber. T.C.A falls in level 2, B drugs used for migraine prophylaxis as per The Clinical Practice Guidelines for Adult Migraine Assessment and Treatment. The MIDAS or Migraine Disability Assessment Test is a test used by doctors to determine how severely migraines affect a patient's life. Patients are asked questions about the frequency and duration of their headaches, as well as how often these headaches limited their ability to participate in activities at work, at school, or at home. The test was evaluated by the professional journal Neurology in 2001; it was found to be both reliable and valid [5].

This study aimed to evaluate the impact of Amitriptyline on MIDAS score.

## SOURCE OF THE DATA

The study was conducted in the Department of Otorhinolaryngology, Fr. Muller Medical College, Mangalore, India.

## MATERIALS AND METHODS

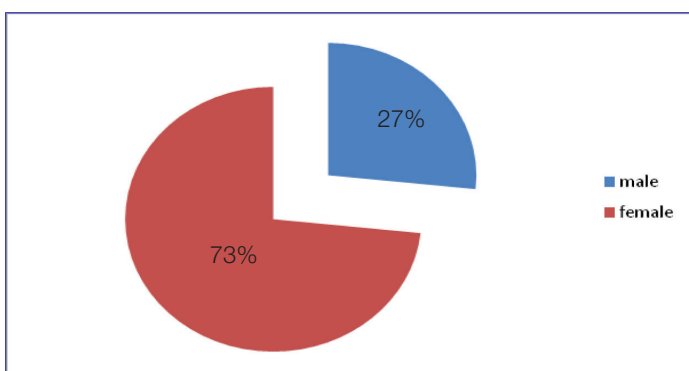
The study was done on 300 patients of either gender, age group 18-60, who required prophylaxis for migraine without aura.

**Inclusion Criteria:** Those who had 3 or more severe migraine attacks per month that failed to respond to abortive therapy, migraine attacks was severe enough to impair the patient's quality of life, patient who had > 2 headaches/week that required pharmacologic interventions were included.

**Exclusion Criteria:** Acute recovery phase following MI, and with concomitant use of monoamine oxidase inhibitors, urinary retention, seizure disorder, glaucoma, hyperthyroidism, schizophrenia, pregnancy and lactation period were excluded.

Midas grade	Definition	Midas score
MIDAS Grade I	Little or no disability	0-5
MIDAS Grade II	Mild disability	6 to 10
MIDAS Grade III	Moderate disability	11 to 20
MIDAS Grade IV	Severe disability	21+

**[Table/Fig-1]:** Developed by Dr Lipton, professor of neurology, Albert Einstein college of medicine New York



**[Table/Fig-2]:** Male and female distribution shows female preponderance 2.75: 1

Demographic data like age, sex were recorded. The MIDAS questionnaire [6,7] was administered to patients before starting treatment and again after 45 days prophylaxis. The improvement was noted.

## STATISTICAL ANALYSIS

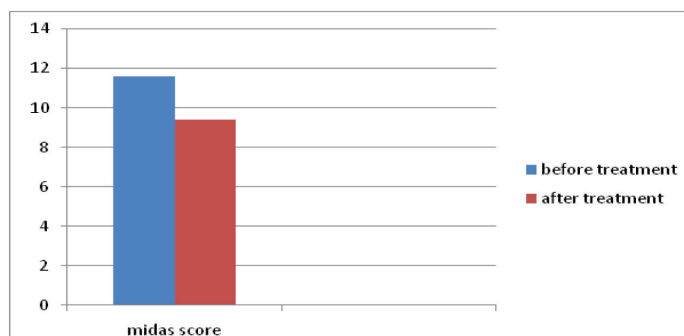
It is a prospective study where the severity of symptoms and 'quality of life' in patients is assessed before and after treatment using mean, frequency, standard deviation and paired t-test [Table/Fig-1].

## RESULTS

The present study showed out of 300 patients 220 were females and 80 were males. 70% of the females and 87.5% of males were in the age group of 30-40 years [Table/Fig-2]. The mean duration of the symptoms was 3 months. 5% of the female population did not show any improvement. The mean MIDAS score before the initiation of the treatment was 11.6 and the score post treatment with Amitriptyline was 9.2 [Table/Fig-3].

## DISCUSSION

The female-to-male ratio increases from 2.5:1 at puberty to 3.5:1 at 40 years of age. In our study 70% of the females were in the age group of 30- 40 years. The mean MIDAS score before and after treatment with Amitriptyline was 11.6 and 9.4 respectively. In a study conducted by Jay Erickson [8] on 365 soldiers, the number of headache days reduced from 11.6 days to 6.1 days in a subset of soldiers who received Amitriptyline. Study conducted by Buchanan and colleagues [9] suggest that Amitriptyline can be helpful in migraine patients with associated sleep disruption, often described as a fragmented, discontinuous sleep pattern, because it can stabilize sleep. The student 't' test showed p-value of <0.005 which was significant. A controlled clinical trial conducted by Rodriguez et al., [10] on migraine prophylaxis showed that the frequency of migraine episodes came down drastically from 272 to 87 after receiving Amitriptyline prophylaxis for 4 months duration (1mg/kg/day). It was also noted that Amitriptyline did not reduce



**[Table/Fig-3]:** The mean MIDAS score before the initiation of the treatment was 11.6 and the score post treatment with Amitriptyline was 9.2

the intensity of the migraine episodes significantly. David et al., [11] conducted a study on migraine prophylaxis with Amitriptyline using a different scale (Migraine Specific quality of life Questionnaire). Results showed significant ( $p=0.04$ ) reduction in mean functional disability score during migraine attacks. Similar studies on Topiramate showed much better reduction in days of migraine attacks from base line [12]. To our study a prophylaxis of a minimum period of 3 months would have yielded consolidating results. Certain lifestyle modifications like avoidance of exposure to sun light, loud noise, chocolate, tea and coffee, good sleep hygiene and regular food habits could have played a role in improving the quality of life but their role could not be evaluated.

## CONCLUSION

Migraine prophylaxis with amitriptyline for a period of 45 days decreased the frequency of symptoms and also reduction in days of migraine attack thus improving the quality of life in migraineurs.

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