

The Efficacy and Safety of Cinnarizine in the Treatment of Vertigo in a Sample of Iraqi Patients in Al-Diwaniyah Province

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Abstract

Background: Vertigo is a common vestibular disorder in daily clinical practice that is frequently described as rotational sensation by patients and caused by a variety of causes that can be central or peripheral in origin. Treatment should be directed toward underlying etiology, but symptomatic relief is required to improve patients' quality of life. Cinnarizine is frequently prescribed to relieve symptoms associated with vertigo; however little is known about its efficacy in daily clinical practice in Al-Diwaniyah province.

Aim of the study: To evaluate the safety and efficacy of cinnarizine in the treatment of vertigo in patients visiting ENT unit at Al-Diwaniyah teaching hospital.

Patients and method: The present cohort study included 66 patients of vertigo who were treated medically by cinnarizine (stugeron) and followed up for treatment response evaluation. The study was carried out in Ear Nose and Throat (ENT) unit in Al-Diwaniyah Teaching Hospital, Mid-Euphrates region, Iraq. The study started on June 2018 and ended on July 2019. The main variables included in the study were age, residency, level of education, occupation, other associated ENT manifestations and chronic illnesses. The primary outcome was response to treatment classified into satisfactory and unsatisfactory.

Results: Mean age of patients with satisfactory response was significantly less than that of patients with unsatisfactory response, 45.73 ± 13.31 years versus 54.95 ± 15.67 years, respectively ($P = 0.016$). Response to treatment was not significantly associated to gender, residency, occupation and education ($P > 0.05$). Response to treatment was not significantly associated to bilateral ear wax, acute otitis media, chronic suppurative otitis media, Meniere's disease and common cold ($P > 0.05$); however, it was significantly in the absence of hearing impairment and tinnitus ($P < 0.05$). Response to treatment was not significantly associated to uremia, trauma, anemia, hypothyroidism, anxiety, hypotension, arthritis and urinary tract infection (UTI) ($P > 0.05$), but significantly better in the absence of diabetes mellitus and hypertension ($P < 0.05$).

Key words: efficacy, safety, cinnarizine, vertigo, Iraq

Introduction

The problem of vertigo is among common clinical issues that are daily seen in emergency department and primary health care centers as well as private Ear Nose and Throat (ENT) clinics ¹. It is frequently described as sensation of motion by patients and mostly as rotational sensation ². It should be differentiated from lightheadedness or near syncope ². Vertigo is often due to abnormalities affecting vestibular system and the lesion could be peripheral or central ³. Vertigo is most often the

result of peripheral lesion such as Meniere's disease and benign paroxysmal positional vertigo (BPPV) ⁴. BPPV is caused by precipitation of calcium deposits in the posterior semicircular canal leading to recurrent attacks of vertigo that often extend for a few minutes ⁵. Meniere's disease is characterized by the presence of tinnitus, aural fullness and hearing impairment in addition to vertigo ⁶. The cause of Meniere's disease is attributed to increase in the volume of endolymph inside semicircular canal ⁶. Viral infection also causes peripheral vertigo due to acute vestibular neuritis of acute labyrinthitis ⁷. Ramsay Hunt

syndrome is another cause of peripheral vertigo caused by reactivation of latent varicella zoster virus in the geniculate ganglion with subsequent vestibulocochlear neuritis⁸. This syndrome is usually associated with signs and symptoms attributed to facial nerve involvement⁸. Other less common causes of peripheral vertigo are cholesteatoma, perilymphatic fistula and otosclerosis⁹. Central causes are due to involvement of cerebellum or vestibular nuclei by ischemic or hemorrhagic stroke¹⁰, tumors of cerebellopontine angle¹¹, vestibular migraines and multiple sclerosis¹². Other causes of vertigo include certain medications¹³, anxiety and other systemic chronic illnesses¹⁴. Vertigo is a frequent problem daily faced in clinical practice and estimated to affect about 10 % of population. It is more frequent in women than in men and its incidence increases with age. It causes significant impairment of quality of life; therefore its cause must be searched and treated properly¹⁵.

Management should be directed toward identification of the cause of vertigo because once the etiology is resolved symptoms disappear¹⁶. However, a number of medications are used to suppress vestibular symptoms for a while till identification of the cause. These medications include anti-histamines, benzodiazepines and antiemetics¹⁷. Cinnarizine (stugeron) is a calcium channel blocker with antihistamine properties is frequently used in clinical practice to relieve symptoms of vertigo arising from a variety of causes¹⁸. In the current study, the efficacy and safety of cinnarizine has been evaluated in a number of Iraqi patients presented with vertigo in Al-Diwaniyah province, Mid-Euphrates region of Iraq.

Patients and Method

The present cohort study included 66 patients of vertigo who were treated medically by cinnarizine (stugeron) and followed up for treatment response evaluation. The study was carried out in Ear Nose and Throat (ENT) unit in Al-Diwaniyah Teaching Hospital, Mid-Euphrates region, Iraq. The study started on June 2018 and ended on July 2019. The main variables included in the study were age, residency, level of education, occupation, other associated ENT manifestations and chronic illnesses. The primary outcome was response to

treatment classified into satisfactory and unsatisfactory. The study was approved by institutional ethical approval committee and a verbal consent was obtained from every participant after full illustration of the study aim and procedures. Obtained data were transformed into SPSS (version 23) spread sheet. Numeric data were expressed as range, mean and standard deviation, whereas, categorical data were expressed as number and percentage. Independent sample t-test was used to evaluate mean difference between two groups; while chi-square and Fisher exact tests were used to study association between categorical variables. The level of significance was considered at $P \leq 0.05$.

Results

The demographic characteristics of patients participating in the current study were demonstrated in table 1. According to response to cinnarizine treatment patients were categorized into two groups, satisfactory response group ($n = 45$) and unsatisfactory response group ($n = 21$). Mean age of patients with satisfactory response was significantly less than that of patients with unsatisfactory response, 45.73 ± 13.31 years versus 54.95 ± 15.67 years, respectively ($P = 0.016$), table 1. There was no significant association between gender and response to treatment ($P = 0.772$). There was also no significant association between residency and response to treatment ($P = 0.547$), table 1. In addition, there was no significant association between occupation and response to treatment ($P = 0.499$), table 1. Moreover, there was no significant association between education and response to treatment ($P = 0.542$), table 1. Regarding other ENT manifestations, response to treatment was not significantly associated to bilateral ear wax, acute otitis media, chronic suppurative otitis media, Meniere's disease and common cold ($P > 0.05$); however, it was significantly in the absence of hearing impairment and tinnitus ($P < 0.05$), as shown in table 2. Regarding other associated diseases and comorbidities, response to treatment was not significantly associated to uremia, trauma, anemia, hypothyroidism, anxiety, hypotension, arthritis and urinary tract infection (UTI) ($P > 0.05$), but significantly better in the absence of diabetes mellitus and hypertension ($P < 0.05$), as shown in table 3.

Table 1: Other ENT manifestations

Characteristic	Total n = 66	Satisfactory response n = 45	Unsatisfactory response n = 21	P
Bilateral Ear wax, n (%)	5 (7.6 %)	5 (11.1 %)	0 (0.0 %)	0.169 F NS
Acute OM, n (%)	4 (6.1 %)	4 (8.9 %)	0 (0.0 %)	0.289 F NS
Chronic suppurative OM, n (%)	4 (6.1 %)	4 (8.9 %)	0 (0.0 %)	0.298 F NS
Meniere's Disease, n (%)	3 (4.5 %)	2 (4.4 %)	1 (4.8 %)	1.000 F NS
Common cold, n (%)	2 (3.0 %)	2 (4.4 %)	0 (0.0 %)	1.000 F NS
Hearing impairment, n (%)	45 (68.2 %)	27 (60.0 %)	18 (85.7 %)	0.037 C S
Tinnitus, n (%)	44 (66.7 %)	25 (55.6 %)	19 (90.5 %)	0.005 C HS

n: number of cases; OM: otitis media; C: Chi-square test; F: Fischer exact test; NS: not significant at $P \leq 0.05$; S: significant at $P \leq 0.05$; HS: NS: highly significant at $P \leq 0.01$

Table 2: Associated diseases and abnormalities

Characteristic	Total n = 66	Satisfactory response n = 45	Unsatisfactory response n = 21	P
Uremia, n (%)	1 (1.5 %)	0 (0.0 %)	1 (4.8 %)	0.318 F NS
Trauma, n (%)	3 (4.5 %)	1 (2.2 %)	2 (9.5 %)	0.236 F NS
Anemia, n (%)	10 (15.2 %)	6 (13.3 %)	4 (19.0 %)	0.714 F NS
Hypothyroidism, n (%)	1 (1.5 %)	0 (0.0 %)	1 (4.8 %)	0.318 F NS
DM, n (%)	25 (37.9 %)	13 (28.9 %)	12 (57.1 %)	0.028 C S
Anxiety, n (%)	2 (3.0 %)	2 (4.4 %)	0 (0.0 %)	1.000 F NS
Hypertension, n (%)	20 (30.3 %)	8 (17.8 %)	12 (57.1 %)	0.001 C HS
Hypotension, n (%)	4 (6.1 %)	4 (8.9 %)	0 (0.0 %)	0.298 F NS
Arthritis, n (%)	4 (6.1 %)	3 (6.7 %)	1 (4.8 %)	1.000 F NS
UTI, n (%)	3 (4.5 %)	1 (2.2 %)	2 (9.5 %)	0.236 F NS

n: number of cases; C: Chi-square test; F: Fischer exact test; NS: not significant at $P \leq 0.05$ S: significant at $P \leq 0.05$; HS: NS: highly significant at $P \leq 0.01$

Discussion

In daily clinical practice, particularly in the unit of ENT, vertigo is a common clinical problem. This problem arises from a variety of causes; however, it can be basically considered as one of two major issues. Either a peripheral cause involving the vestibular system, as is the case in most of patients or a central lesion affecting the cerebellum or vestibular system causing vertigo in addition to other localizing neurologic clinical signs (3-9). It is, indeed, the diagnosis of the exact etiology of vertigo and removing the specific cause, the ideal way to get rid of vertigo; nevertheless, in most of cases this not amenable until a period of time during which the patients quality of life is severely affected (16, 17). For that reason symptomatic relief is sought by almost all patients in order to improve their quality of life and get rid of that annoying symptom. Several pharmacological agents are nowadays present but the efficacy of which is still not investigated in our health institutes. We select cinnarizine because it is the most commonly prescribed agent by most physicians in Al-Diwaniyah province in order to evaluate its efficacy and safety. In the current study, cinnarizine was effective and safe with negligible side effects. Its efficacy was seen in 45 out of 66 (68.2 %) which is comparable to a number of reports of several previous authors (18-20). However, we found that its efficacy is low in patients with hypertension, diabetes, tinnitus and hearing impairments. Therefore, we believe, that the treatment of the exact cause is the best therapy for those patients. In addition, the search for central cause such as ischemic stroke in those patients is mandatory since cinnarizine mainly acts on peripheral vestibular apparatus. Our findings are in line with several other authors with respect to poor response in case of tinnitus and hearing loss (19). Therefore, Cinnarizine is effective and safe in the treatment of majority of causes of vertigo; however, some cases need other than cinnarizine to control their symptoms especially those patients with tinnitus, hearing impairment, diabetes mellitus and hypertension.

Conclusion

Cinnarizine is effective and safe in the treatment of majority of causes of vertigo; however, some cases need other than cinnarizine to control their symptoms especially those patients with tinnitus, hearing impairment, diabetes mellitus and hypertension.

Financial Disclosure: There is no financial disclosure.

Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Al-Diwaniyah Teaching Hospital / Department of surgery / Al-Diwania / Iraq and all experiments were carried out in accordance with approved guidelines.

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