

Dizziness in the Emergency Department!

Acil Serviste Baş Dönmesi!

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ABSTRACT

BACKGROUND: The aim was to determine the demography and causes of the patient with a complaint of dizziness.

METHODS: This report included the patients with an only complaint of dizziness in ED between 1 May and 1 July in 2008. Age, sex, chronic disease, chronic drug usage, physical examination findings studied with Dix-Halpike and Epley tests if suitable, EKG, imaging if needed. The statistical tests were descriptive and Kruskal Wallis test with SPSS 15.

RESULTS: There were a total of 79 patients in this prospective study. The males were 35.4% and the females were 64.6% of the patients. 60.8% had at least one chronic disease. 46.8% had chronically drug treatment. 39.2% of them visited EDs with similar complain in last two weeks. 22.78% of patients were hospitalised. 8.86% of patients had a cardiac problem, 6.32% were psychiatric and others were followed as hematological, inflectional and acute gastrointestinal diseases. The cases were evaluated as the patients with vertiginous and non-vertiginous symptoms. There was not spontan nystagmus in 69.1% of the vertiginous group. Vertiginous group divided in peripheral and central. 44.9% of them had Dix-Halpike test and 30.6% of them had positive findings. 44.9% of them had Epley maneuver and the ratio of relieving symptoms were 28.6% without any medication in patients within the same peripheral group. In the central vertiginous group 16.7% of them didn't have any significant central findings.

CONCLUSION: The patients with a complaint of dizziness should be evaluated with all systems carefully not to misdiagnose life-threatening causes.

Key words: Dizziness, Emergency department

ÖZET

AMAÇ: Amaç baş dönmesi şikayeti olan hastanın demografi ve nedenlerini belirlemektir.

GEREÇ VE YÖNTEM: Çalışma 1 Mayıs ve 1 Temmuz 2008 arasında Acil serviste yalnız baş dönme şikayeti olan hastaları içermektedir. Yaş, cinsiyet, kronik hastalıklar, kronik ilaç kullanımı, eğer uygunsa Dix-Halpike ve Epley testleri ile fizik bakı bulguları, EKG, gerektiğinde görüntüleme yöntemleri çalışıldı. İstatistiksel testler SPSS15 tanımlayıcı ve Kruskal Wallis testleri idi.

BULGULAR: Bu prospektif çalışmada toplam olarak 79 hasta vardı. Hastaların %35.4 ü erkek ve %64.6'ü kadındı. %60.8'inin en az bir kronik hastalığı, %46.8'inin kronik ilaç kullanımı vardı. %39.2'si benzer şikayetle son iki hafta içinde AS'e başvurmuştu. Hastaların %22.78'i hastaneye yatırıldı. Hastalarda %8.86'ü kardiyak problem, %6.32' i psikiyatrik ve diğerlerini hematoloji, enfeksiyon ve akut gastrointestinal hastalıklar izledi. Olgular baş döndürücü ve olmayan semptomlar olarak değerlendirildi. İlk grubun %69,1'nde spontan nistagmus yoktu. Bu grup periferik ve santral olarak ayrıldı. %44.9'una Dix-Halpike testi yapıldı ve %30.6'sında pozitif bulgular vardı. %44.9'una Epley manevrası uygulandı ve aynı periferik grupta ilaç tedavisi almadan semptomların düzelme oranı %28.6 idi. Santral grubun %16.7'sinde belirgin santral bulgular yoktu.

SONUÇ: Baş dönmesi şikayeti olan hastalarda yaşamı riske eden nedenleri atlamamak için tüm sistemler dikkatli değerlendirilmelidir.

Anahtar Kelimeler: Baş dönmesi, Acil servis.

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BACKGROUND

Dizziness is a complaint with various causes in ED. The feeling of the movement, light-headedness, and weakness can be mentioned as dizziness by the patient. Evaluation and management of these patients can be life-threatening. The reasons of dizziness can be classified as vertiginous (V) and non-vertiginous (NV). Vertiginous kind is divided as peripheral (PV) and central (CV) ⁽¹⁾. Detailed physical examination is the key to manage and not to misdiagnose the patient. This report aimed to identify the demography and classification of referred the dizzy patient in ED.

METHODS

It was a preliminary prospective study included cases between 1 May 2008 and 1 July 2008 in two EDs in Ankara and Adana that visited a total of our two clinics included approximately 150 patients a day. The patients who had an only complaint of dizziness in ED were studied. The patients without a consent described and signed about usage of the knowledge confirmed by the ethic committee of the University were excluded. Age, sex, chronic diseases, chronically drug using, history, physical examination and the additional tests if needed were evaluated.

Peripheral and central vertiginous findings were studied. When nystagmus was not present at rest in PV groups, Dix-Hallpike test performed if the patient was suitable and obey this maneuver while evaluating the patient's eye movement on supine a right and a left 30 lateral head position focused on the finger ^(1,4). In V group, symptoms were evaluated with the characteristics of symptoms as severity, onset, duration, positional, fatigable, associated symptoms, associated nystagmus to distinguish peripheral and central vertigo ^(1,6).

Nonvertiginous group was defined the patients that had any acute systemic and/or local significant findings except vestibular and cerebral organs.

Kruskall Wallis H and Fisher's Exact test were used with SPSS 15.

RESULTS

There were a total of 79 patients in this prospective study. The cases were evaluated as the patients with vertiginous (V) and non-vertiginous (NV) symptoms. Vertiginous group divided in peripheral (PV) and central (CV) (*Figure 1*).

The mean age was 50.8 ± 18.2 . The mean age of NV group was 42.3 ± 17.8 and V group was 54.4 ± 17.3 and ($p=0.008$). The males were 35.4% and the females were 64.6% of the patients. Ratios of NV, PV, CV groups due to male sex were 33.3%, 32.7%, 66.7%. There were not any significant difference between V and NV, VP and VS groups ($p=0.795$, $p=0.175$). 60.8% had at least one chronic disease and there were not any chronic disease in 39.2% of them (50% NV, 65.3% PV, 66.7% CV). There were not any significant difference between V and NV, PV and CV groups ($p=0.195$,

$p=1.0$). 46.8% had chronic drug treatment and there were not any drug using in 53.2% of them. Chronic drug usage ratio was 54.2% in NV, 42.9% in PV, 50% in CV. There were not any significant difference between V and NV, PV and CV groups ($p=0.388$, $p=1.0$).

39.2% of them visited EDs with similar complain in last two weeks. The ratios were 25%, 49%, 16.7% in NV, PV, CV groups. There were not any significant difference between V and NV, PV and CV groups ($p=0.086$, 0.204). 22.78% of patients were hospitalized with a ratio of 41.7% NV, 6.2% PV, 83.33% CV. Age, male sex, similar complaint, having any chronically diseases, using any chronically drug, hospitalization ratios were showed in *Table 1*. Peripheral cases were BPV ($n=43$, 54.5%), otitis media ($n=4$, 5.1%), maxillary sinusitis ($n=1$, 1.3%), vestibular neuritis ($n=1$, 1.3%). Central cases were cerebral infarct, vertebral artery dissection ($n=1, n=1.3$), cerebral tumor ($n=1, 1.3$). 8.86% ($n=7$) of patients had an cardiac problem, these were VT with pulse, ACS, SVT, endocarditis, malign hypertension. 6.32% ($n=5$) were psychiatric and others were followed as 3.79% ($n=3$) hematological (with serious anemia), 3.79% ($n=3$) infectious (unknown fever, gastroenteritis) and 2.53% ($n=2$) acute gastrointestinal diseases as hemorrhage. Others were neck trauma ($n=1$, 1.3%), vasovagal ($n=1$, 1.3%), Wernicke encephalopathy ($n=1$, 1.3%), epilepsia ($n=1$, 1.3%). There were not spontaneous nystagmuses in 69.1% of the vertiginous group. 44.9% of them had Dix-Halpike test and 68.2% of them had positive findings. There were spontaneous nystagmus with a ratio of 26.5% in PV, 66.7% in CV ($p=0.066$). 44.9% of them had Epley maneuver and the ratio of relieved symptoms were 63.6% without any medication in patients applied these maneuvers within peripheral group. Dissociation of the patients within the complaint of dizziness is showed in *Figure 1*. The finalization of patient management in ED is seen in *Figure 2*. One patient (16.7%) didn't have any central findings in CV group, and one patient (2%) had mimicking central findings in PV group of vertiginous group (*Table 2*). There were significant differences between peripheral findings and peripheral vertigo ($p=0.000$), central findings and central vertigo ($p=0.000$). Mean time for staying of V group in ED was 94.1 ± 37 , of NV group was 77.9 ± 33 minutes ($p=0.115$). The time in PV was 93.6 ± 36.3 , in CV was 98 ± 45 and there was not a significant difference between in two groups ($p=0.968$). CT was used 28,6% in PV and 100% in CV group.

Table 1. The age and the ratio of male sex, similar complaint, chronically any disease, using any chronically drug and hospitalization according to groups.

	NV	PV	CV
Age	42.3±17.8	54.2±17.8	56.5±12.8
Male sex	%33.3	%32.7	%66.7
Similar complaint in last two weeks.	%25	%49	%16.7
Having at least one chronically disease	%50	%65.3	%66.7
Any chronically drug usage.	%54.2	%42.9	%50
Hospitalization	%41.7	%6.2	%83.33

Table 2. Comparison of having central findings in vertiginous groups.

Central findings in vertiginous groups	PV	CV	Total
Absent [n (%)]	48(98%)	1(16.7%)	49(89.1%)
Found [n(%)]	1(2%)	5(83.3%)	6(10.9%)
Total	49(100%)	6(100%)	55(100%)

Fisher's Exact, $p=0.000<0.05$

DISCUSSION

Dizziness is a complaint that includes several of reasons in ED. The complaint of dizziness can be explained vertiginous and non-vertiginous according to findings after a first step as evaluated in advanced life support and stabilization of the patient^(1,5,6). A good history during the physical examination is the second step about a clinically stable patient. Evaluation and management are not always easy within a limited time and in a crowded department. The complaint of dizziness can be presented as moving herself or around assumed as weakness, presyncope⁽⁷⁾. The dizziness can be vertiginous and non-vertiginous. Vertiginous group is divided as peripheral and central⁽¹⁾. Peripheral vertigo reasons are the pathologies of the vestibular end organs, vestibular nerve, and the vestibular nuclei presented in benign paroxysmal positional vertigo, otitis media, labyrinthitis, vestibular neuritis. A study showed 50% of dizziness patients caused peripheral pathologies⁽⁸⁾, in our report this ratio was 55.69%. The most reason of PV was the BPV with a posterior otoliths and Epley was the treatment maneuver reposition of the particles to the utricle from the posterior canal in a report⁽⁴⁾. However, nystagmus was not an essential finding spontaneously and/or during Dix-Hallpike as a confirmational test for BPV⁽⁴⁾. There were not spontan nystagmus in 69.1% of the vertiginous group, Tirelli and et al mentioned a rate of 61% patients without nystagmus. Advanced researchs to identify nystagmus with specialized Frenzel lense or infrared videonystagmography

were described^(4,9). Chang and et al mentioned the efficacy with an absolute improvement of acute benign positional vertigo 55% by Epley in ED⁽⁴⁾. The relief in symptoms were reported 51% to 81% in literature without ED (10,11). In our study, relieving the symptoms with Epley was 63.6% and this maneuver could be beneficial in ED. Central vertigo causes were reported as the cerebral abnormalities as cerebral infarct, hemorrhage, brainstem ischemia, dissection, vertebrobasilar insufficiency⁽⁸⁾. Hoffman reported 19% of dizziness were cerebrovascular diseases⁽⁸⁾. In our report the most cerebral cases were infarcts and than vertebral arter dissection and cerebral tumor. Radiological scanning was indicated in diagnostically if there was a new-onset vertigo and/or with neurological findings^(1,6). Cerebellar screen could be diagnostical with especially MR for cerebellar hemorrhage, cerebellar infarction or other central pathologies were suspected on CT^(1,6). In our report 41.81% CT, 5% MR were used to identify vertiginous symptoms. Age and sex were not significant factors for the studied groups except the age of nonvertiginous group that was younger ($p=0.008$) and the most, however dominant sex of the central vertiginous group was male as in our study and 55% in a study. The age of the CV (69.3±12.9) was older than others in Kerber's study⁽¹²⁾. Chronic diseases and chronic drug using ratio was correlate with central pathologies⁽¹⁾. There was not a relation between having chronic diseases and drug usage in our studied groups. Lawson demonstrated the ratio of cardiovascular causes as 36%, 23% of them were peripheral vestibular disorder, 18% had a central pathology⁽¹³⁾. Literature failure to distinguish vertigo from other dizziness types (78%) except published case reports^(2,7). Cardiac reasons were the most reasons in nonvertiginous dizziness with an ratio of 8.86%. Herr showed 30% of dizziness caused by serious conditions as stroke, cardiac arrhythmia, acute infection and anemia⁽¹⁴⁾. Newman reported sick-sinus syndrome or reflex bradycardia with asystole were the reasons of recurrent dizziness⁽⁷⁾. Demiryoguran and et al reported a painless aortic dissection with bilateral carotid involvement presenting with vertigo⁽²⁾. Rane presented a vertebral artery dissection complained with only vertigo⁽¹⁵⁾. In a study admission rate was 20.4%⁽⁵⁾, in our report it was 22.78%.

EKG, detailed physical examination of all systems with cardiac, vascular, cerebral, lung and gastrointestinal systems associated in descriptive history and the basic laboratories as CBC, emergent biochemical parameters were the clues in determination of NV group. The management steps included in differential diagnose should be made for life-threatening reasons at first, and then PV. All patients with a first diagnosis assumed as BPV had imagining to decide in peripheral or central.

LIMITATIONS

Limitations of this study were; It was a preliminary report according to the total of the patients and duration. Epley was not scored. However, Dix and Epley could be performed in more patients with BPV if they were agreeable and suitable for the maneuvers.

CONCLUSION

The patient with a complaint of dizziness without clear vertiginous symptoms has a differential wide broad as it is a multisensorial abnormality. Positional nystagmus was generally due to vestibular disease and Epley was mentioned as the treatment maneuver with turning of the head to the opposite side of the nystagmus ⁽⁶⁾. Although most of the patients were discharged, they should be evaluated within a systemic approach. Psychogenic pattern could be the last diagnostical terminology for dizzy patient after all necessary evaluations not to misdiagnose the life-threatening reasons. Observation and repeated physical examination in all patients provided to determine the progress. Dizziness was accepted as emergent before evaluation as BPV, the most reason of it in ED.

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