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Retrospective Evaluation of Patients Admitted With Complaints of Syncope

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Abstract

Objectives: The incidence of syncope defined as the transient loss of awareness and tonus due to the decrease in cerebral perfusion has been reported to be 86.5-125.8/100.000. Although it has often been reported to be a benign condition, underlying factors can be the cause of a cardiovascular, neurological or metabolic disease. In this study, it is aimed to evaluate the patients admitted for syncope retrospectively and to evaluate the underlying etiologic factors.

Files of a total of 259 patients including 166 (64.1%) females and 93 (35.9%) males who applied to the Pediatric Neurology Clinic of our hospital with syncope complaints between the years 2012-2015 were analyzed retrospectively. Epilepsy-diagnosed and post-traumatic patients were not included in the study.

Findings: 259 patients aged between 1-18 (average 11.5 ± 4.62) were included in the study. Etiological factors leading to syncope have been identified in 199/259 (76.8%) patients. Vasovagal syncope has been determined in 10/259 (3.9%) patients, iron-deficiency anemia in 64/259 (24.7%) patients, vitamin B12 deficiency in 69/259 (26.6%) patients, cardiac causes (MPV ASD PDA) in 31/259 (11.9%) patients, epileptiform abnormalities in the EEG of 25/259 (9.7%) patients. The cause of syncope in the other 60/259 (23.2%) patients is not disclosed.

Conclusion: Although syncope is often a benign condition, each patient should be assessed with a good detailed history and physical examination, further investigations should be performed in undiagnosed patients. Most of the patients can be diagnosed with detailed history, physical examination, EEG and ECG tests. In patients applying for syncope, all the causes of syncope should be considered.

Keywords: Child; Syncope; Etiologic factors

Introduction

Syncope is not a disease but refers to the symptoms of various diseases, and is a major problem in pediatrics. Syncope is defined as the loss of postural stance with transient loss of consciousness due to the decrease in cerebral perfusion, and fast and immediate improvement without any visible neurological sequelae can be seen [1]. Syncope is a common medical problem in the emergency service and it constitutes 3% of the applications to the emergency department and 1-6% of the hospitalizations [2,3]. 15% of children before the adolescent age have been reported to occur at least once and a higher incidence in girls was determined [4]. There are several diagnostic tests for the evaluation of syncope cases which was divided into 5 etiological groups by Day et al. [2] but still etiology cannot be determined in 40-50% of cases. The incidence of syncope in children and adolescents was reported to be 126/100.000 [5]. However, it has been reported that the incidence rate of syncope at least once in children before the age of 18 has been reported to be 15% [6]. In this study, it is aimed to evaluate the patients admitted for syncope retrospectively and to evaluate the underlying etiologic factors.

Materials and Methods

Files of a total of 259 patients including 166 (64.1%) females and 93 (35.9%) males who applied to the Pediatric Neurology Clinic of our hospital with syncope complaints between the years 2012-2015 were analyzed retrospectively. Epilepsy-diagnosed and post-traumatic patients were not included in the study.

Findings

259 patients aged between 1-18 (average 11.5 ± 4.62) were included in the study. Etiological factors leading to syncope have been identified in 199/259 (76.8%) patients. Vasovagal syncope has been determined in 10/259 (3.9%) patients, iron-deficiency anemia in 64/259 (24.7%) patients, vitamin B12 deficiency in 69/259 (26.6%) patients, cardiac causes (MPV, ASD, PDA) in 31/259 (11.9%) patients, epileptiform abnormalities in the EEG of 25/259 (9.7%) patients. The cause of syncope in the other 60/259 (23.2%) patients is not disclosed.

Discussion

Syncope is not a disease but can be the symptom of various diseases. Syncope constitutes 3% of the applications to the emergency department and 1-6% of the hospitalizations 1-6's % [2,3]. 15% of children before the adolescent age have been reported to occur at least once and a higher incidence in girls was determined [4]. Day et al. [2] divided syncope into 5 etiological groups including: central nervous system syncope, cardiac syncope, metabolic syncope, vasovagal-psychogenic syncope and syncope with undetermined causes. Cardiac syncope has the prognosis with the worst course and the annual mortality rate varies by 20-30%. However, mortality of syncope of undetermined causes has been reported as 6%.

In some of the studies, the rate of central nervous system syncope has been reported as 3-32%, cardiac syncope as 7-21%, vasovagal-psychogenic syncope as 45% and syncope with undetermined causes as 35-65% [7-9]. Courtheix et al. [10] have reported neurocardiogenic syncope at the rate of 69%, cardiac syncope at the rate of 5%, vasovagal-psychogenic syncope at the rate of 20%, neurological syncope at the rate of 2% and syncope due to other causes at the rate of 1%.

Day et al. [2] have reported vasovagal-psychogenic syncope in 40%, central nervous system syncope in 32%, cardiac syncope in 8%, metabolic syncope in 7% and syncope of undetermined causes in 13% of the cases enrolled in their study. Ayrık et al. [11] reported that they have identified central nervous system syncope in 19.9%, vasovagal-psychogenic syncope in 35.3%, cardiac syncope in 11.5% and metabolic syncope in 5.8% of 156 patients enrolled in the study.

In our study, etiological factors that lead to syncope have been identified in 199 patients (76.8%) of 259 patients enrolled in the study. Vasovagal syncope has been detected in 10 (3.9%) patients, iron-deficiency anemia in 64 (24.7%) patients, vitamin B12 deficiency in 69 (26.6%) patients, cardiac causes (MPV, ASD, PDA) in 31 (11.9%) patients, and epileptiform abnormalities in the EEG of 25 (9.7%) patients. The cause of syncope in other 60 (23.2%) patients could not have been disclosed. The difference in the data obtained in various studies is related to the number of patients included in the study, the high rates in some cases reflect the social and economic structure of the society and the results are similar.

Patients aged 1-18 years are included in our study, and classification was made according to previously mentioned etiologic factors. The average age of the patients was 11.5 ± 4.62 including 64.1% females, and 35.9% males. Some researchers (4.11) have reported high rates of syncope in women in their studies in accordance with our study. The highest rate of 51.3% (24.7% iron-deficiency anemia and 26.6% vitamin B12 deficiency) among patients diagnosed with syncope in our study is caused by reasons related to metabolic medicine. The second highest rate is caused by cardiogenic causes with 11.9%, and MPV, ASD and PDA were the main causes. ECG which is a noninvasive method has an important place in the diagnosis of these. ECG is an important diagnostic help in patients that cannot be diagnosed with syncope with history and physical examination. The results of EEG epileptic activity detection rate ratios in a study performed by Yılmaz et al. [12] have been found to be similar with the results in our study.

Conclusion

As a conclusion, although syncope is often a benign condition, each patient should be assessed with a good detailed history and physical examination, further investigations should be performed in undiagnosed patients. Most of the patients can be diagnosed with detailed history, physical examination, EEG and ECG tests. In patients applying for syncope, all the causes of syncope should be considered.

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