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Research Article

Diagnostic Evaluation of Syncope By 24 hour Holter Monitoring

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Abstract: The aim & objective was diagnostic evaluation by Holter Monitroing of Patient with clinical diagnosis of syncope referred to Department of Cardiology at SAIMS & PG Institute, Indore. We evaluated a total of 360 patients with clinical diagnosis of Syncope all subjects underwent 24 hours Holter monitoring with Philips Holter 1810 with Zymed Algorithm. All patients were of age between 50yrs to 70 yrs. During the monitoring period recurrence of syncope or symptoms of near syncope are correlated with monitoring findings. Out of total 360 patient who undergone 24hours of Holter monitoring 216 patients reported normal. In rest of patient during recording 80.56 % were asymptomatic, 19.44% were symptomatic of which syncopal episodes were seen in 2.78% and presyncopal episodes in 16.66%. A Sinus pauses of >2.5 Sec. was documented in 12.22%. Intermittent complete AV block in 5.5% & Mobiz type II AV block in 3.3% .Non sustained VT (Ventricular Tachycardia) and Intermittent AF (Atrial Fibrillation) 10.5%. Holter monitoring should be used as a test for evaluation of cardiovascular causes of syncope. It will play a important role to detect a cardiac cause of syncope in most of patients.
Keywords: Syncope, Sinus Pause, AV Block, Non Sustained VT, Intermittent AF.

INTRODUCTION

Syncope is defined as a transient, self-limited loss of consciousness with an inability to maintain postural tone that is followed by spontaneous recovery. This definition excludes seizures, coma, shock, or other states of altered consciousness. Although most causes of syncope are benign, this symptom presages a life-threatening event in a certain subset of patients. At the age of 60-70 yrs. 5% to 20% of patient's will experience one or more syncopal and /or presyncopal episodes. Six percent of IPD Hospital admission and three percent of Emergency visit are due to syncopal and / or presyncopal account [1, 2]. As much as 50% of the population may experience a syncopal event during their lifetime. Although many etiologies for syncope are recognized, categorization into reflex (neurally mediated), orthostatic, and cardiovascular may be helpful during the initial evaluation. Cardiac syncope is associated with increased mortality, whereas noncardiac syncope is not. Syncope may result in significant morbidity due to falls or accidents that occur as a result.

Syncope is a complex problem frequently confronted by primary care Physician . Recent reviews of the 2001 American College of Emergency Physician (ACEP) clinical policy suggest that evidence-based criteria may decrease admission rates by nearly half by identifying cardiac causes of syncope. Patients with syncope and /or presyncope not diagnosed by initial clinical evaluation are usually referred for 24 /48 hours ambulatory Holter monitoring. Holter monitoring is routinely used in patients referred for the evaluation of syncope, but its diagnostic value in different patient groups is unclear. If a patient during the Holter monitoring has reported recurrence of syncope and /or presyncopal episodes then AV block and /or arrhythmia may be included or excluded as the cause of syncope according to their temporal concurrence with the patients symptoms. There are four pathophysiological mechanisms.It can be due to transient reduction of cerebral blood flow due to CHB, LVOT or RVOT obstruction, Cardiac arrhythmia which may reduce cardiac output and leads to syncope. Vasomotor instability may transiently decrease systemic vascular resistance and /or venous return may leads to hypotension & preceptating syncope. Variety of drugs in different doses may reduce cerebral blood flow and lead to syncope due to orthostatic hypotension and /or arrhythmia.

MATERIAL AND METHODS

We prospectively studied 360 subject referred to Department of Cardiology at SAIMS & PG Institute at Indore (M.P.) a tertiary care center with clinical history of Syncope. Ethical clearance was taken from the SAIMS ethical committee. The study was conducted from July 2011 to December 2013. A written consent was taken by all the subjects included in the study. Further a clinical history, general examination and a detail cardiovascular examination was done. Pulse and Blood Pressure was taken in supine position. A total of three readings were taken and the final reading was taken as the mean of three readings. All subjects were explained about the test and undergone 24hours Holter monitoring the machine used was Philips Holter 1810 with Zymed Algorithm. The patients were asked to do their normal day to day activities except not to take bath. They were asked to keep the record of recurrence of syncopal and /or near syncopal episodes and any other untowards events during the monitoring period. The data was collected and was further analyzed by using SPSS software version 11.0.

RESULTS

A total of 360 subjects were enrolled in the study. 288(80%) were male and 72(20%) were female subjects. Out of total 360 sunjects 252(70%) were less than 60yrs of age and 108(30%) were more than 60yrs of age.On the basis of clinical profile 70/360 subjects that is 19.44% were symptomatic, 10/360(2.77%) were diagnosed clinically as Syncope and 60/360 (16.66%) were diagnosed as Presyncopal on clinical grounds.290/360(80.56%) were asymptomatic. Out of total 360 subject undergone Holter monitoring 216/360(60%) were reported normal. Rest of 194 subjects on holter monitoring were diagnosed accordingly. Sinus pause of greater than 2.5seconds was seen in 44/360(12.22%) of subjects, Atrial Fibrillation with R-R interval 2.5 sec. was found in 18/360(5%) of subject, Intermittent complete A-V Block was seen in 20/360(5.5%) of subjects, Mobiz II type A-V Block seen in 12/360 (3.33%). Further Non-sustain VT was found in 20/360(5.5%) of subjects, Silent mayocardial ischemia was found in 30/360(8.33%) of subject.

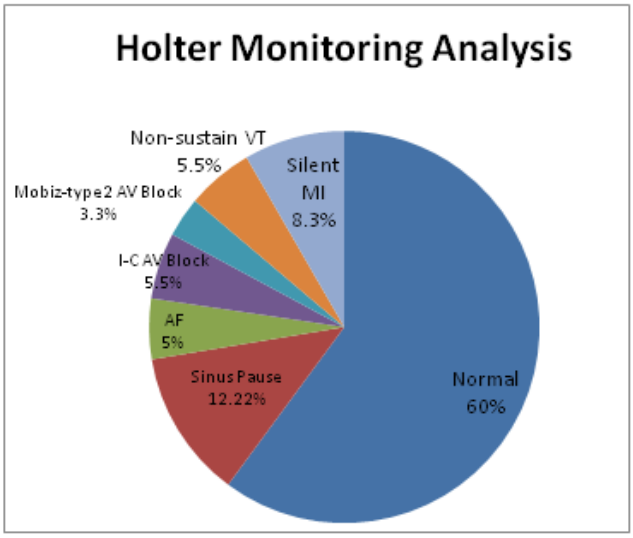

Fig.1: Holter Monitoring Analysis

DISCUSSIONS

A detail and careful history with physical examination may help in determine the cause of Syncope in about 50% of the cases [3, 4]. Orthostatic Hypotension, Cardioinhibitory reaction and situational syncope are diagnosed only by history taking and/or by physical examination [2-4]. Dizziness should excluded and not be considered as syncope. An Eyewitness at the time of taking history is of significant importance and helpful for evaluation of Pre-Syncope, Syncope and Post–Syncope episodes [1, 3].

Study have shown that in subject whose Blood Pressure were measured in supine and standing position in both arms. Patients may experience of Syncope or near syncope if systolic Blood pressure falls more than 25 mmHg in standing or less than 90 mmHg after standing for 5 min [3]. Further some studies have shown that routine ECG may help in to establish the cause of Syncope in 3%-6% of patients with clinical diagnosis of syncope. Subjects with Brady –arrhythmia or tachy-arrhythmia or AMI may result or present as Syncope [1, 3, 4].

Patients with clinical diagnosis of syncope not diagnosed by initial evaluation are usually referred for 24/48 hrs. Holter monitoring. Unfortunately in the largest available studies only 1% -4% of patients had syncopal episodes during the monitoring periods and 16% -20% patient experience symptom of near Syncope [1, 5]. About 80% of patients remain asymptomatic. Major symptomatic arrhythmia found in 10% of the patients and 10% similar arrhythmia may be asymptomatic [1, 6].

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