



An Observational Study of Patients With Palpitations and Evaluation of Holter Monitoring in Them

KEYWORDS

Palpitations, Holter monitoring, Abnormal Insignificant, Abnormal Significant, Bradyarrhythmia, Tachyarrhythmia

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ABSTRACT **INTRODUCTION:** Palpitations is unusual awareness of one's own heart beat. Holter monitoring is done to find etiology of palpitations. The aim of our study was to evaluate the holter findings in patients of palpitations in relation to abnormal significant, abnormal insignificant and normal cardiac rhythms.

MATERIALS AND METHODS: 24 hr holter monitoring data for patients with palpitations admitted to Smt. Kashibai Navale Medical college and General Hospital, Pune, Maharashtra, a teaching tertiary care hospital from January 2014 to March 2015 was analysed with respect to age, sex, cardiac rhythm abnormalities and presence of underlying cardiac or non cardiac condition.

RESULTS: Holter monitoring data for 117 patients with palpitations was analysed. 54 (46.15%) patients were males, 63 (53.84%) patients were females. 48 (41%) patients were <41 yrs and 69 (59%) patients were > 41 yrs of age. Certain medical disorders pre-existed in these patients. 48.7% palpitations were attributed to cardiac cause (hypertension, valvular heart disease, MVP i.e. mitral valve prolapse and DCMP i.e. dilated cardiomyopathy); 27.4% to miscellaneous causes like COPD, thyroid disorders and 23.9% due to anxiety. 27.6% of holter studies were abnormal significant, 39.3% with abnormal insignificant findings and 33.3% were normal.

CONCLUSION: Almost 1/3rd i.e. 33.3% of the patients with palpitations had no arrhythmias. Though 76% of palpitations were due to some cardiac or non cardiac condition atleast 24% could only be explained by psychiatric conditions like anxiety.

INTRODUCTION

Palpitations is unusual awareness of one's own heart beat. It may be caused by cardiac rhythm abnormalities, structural heart disease, metabolic conditions, drug induced or psychiatric conditions like anxiety. Holter monitoring is done to find etiology of palpitations when it cannot be determined from the patient's history, physical examination, and resting ECG. The aim of our study was to evaluate the holter findings in patients of palpitations in relation to abnormal significant, abnormal insignificant and normal cardiac rhythms.

MATERIALS AND METHODS

24 hr holter monitoring data for patients with palpitations admitted to Smt. Kashibai Navale Medical college and General Hospital, Pune, Maharashtra, a teaching tertiary care hospital from January 2014 to March 2015 was analysed with respect to age, sex, cardiac rhythm abnormalities and presence of underlying cardiac or non cardiac condition.

The rhythms observed were categorized as follows:

1. ABNORMAL SIGNIFICANT which included
 - a. Sinus tachycardia HR>140
 - b. Atrial tachycardia HR>140
 - c. Supraventricular tachycardia (SVT) –AVNRT
 - d. Atrial fibrillation- new onset, atrial flutter
 - e. Ventricular Premature complexes (VPCs) more than 10% of total QRS complexes
 - f. Ventricular tachycardia

- g. Sinus bradycardia with heart rate less than 40 beats per minute
- h. Atrioventricular conduction block- II and III degree

2. ABNORMAL INSIGNIFICANT which included all other rhythm disturbances not categorized as either ABNORMAL SIGNIFICANT or NORMAL.

3. NORMAL which included Normal Sinus rhythm

RESULTS

Holter monitoring data for 117 patients with palpitations was analysed. 54 (46.15%) patients were males, 63 (53.84%) patients were females. 48 (41%) patients were <41 yrs and 69 (59%) patients were > 41 yrs of age. (Figure 1) Certain medical disorders pre-existed in these patients as shown in Table 1.

The purpose of holter monitoring in these patients was to know the rhythm abnormality and guide therapy accordingly. A few patients had more than one pre existing diagnoses.

Abnormal significant rhythm was seen in 32 patients (27.35%), 14 were males and 18 were females. (Table 2)

3 patients with DCMP (out of which 2 had hypertension), who presented with palpitations were detected to have new onset atrial fibrillation.

A young lady had AVNRT who complained of recurrent episodic palpitations.

3 patients with bradyarrhythmia had palpitations. One had CHB and 2 had II degree AVB (type I and II one each).

One schizophrenic young male on antipsychotics had ill sustained VT.

VPCs (>10 % complexes of total) was the commonest (13 out of 32) rhythm abnormality amongst abnormal significant diagnoses.

Abnormal insignificant rhythm abnormalities were seen in 46 (39.31%) patients, 24 were males and 22 were females.

Atrial premature complexes (atrial bigeminy/trigeminy) was the commonest (17 out of 46) category amongst abnormal insignificant diagnoses. 11 of these patients had COPD.

Palpitations were also experienced by patients who had pre existing atrial fibrillation.

One patient with hypothyroidism with sinus bradycardia had palpitations.

39 patients (33%) i.e. almost 1/3rd of patients had no rhythm abnormality which pointed towards psychogenic aetiology of palpitations. 16 of these were males and 23 were females. (Figure 2)

DISCUSSION

Palpitations are an unusual awareness of one's own heart beat. Holter studies help us to determine whether any life threatening arrhythmias led to the palpitations and thus help us to treat or assure the patients of the harmlessness of their symptom.

Patients complain of various sensations like a rapid fluttering in chest or regular sustained palpitations are seen in regular supraventricular tachycardia/ventricular tachyarrhythmias.¹ They may have neck palpitations as in AV nodal tachycardia & VPCs (leading to AV dissociation) due to simultaneous contraction of the atria and ventricles leading to filling of SVC.² Also an increased end diastolic volume after a VPC will be lead the next beat to be perceived as a forceful beat.³ The ones that happen gradually indicate benign etiologies such as sinus tachycardia during exercise or anxiety.⁴ Palpitations occurring during minimal stress as in myocardial ischemia, CCF, atrial fibrillation, anemia, thyrotoxicosis are due to catecholamine excess. Patients with hypertension have an increased contractile force and altered hemodynamics which might result in palpitations. Atrial fibrillation is a common arrhythmia in long standing hypertensives. Structural heart diseases like valvular heart disease, MVP and DCMP also present as palpitations. In young patients with unexplained palpitations a 2D ECHO can help diagnose MVP.⁵ Patients with DCMP with atrial fibrillation or those in CCF will present as palpitations. In patients with COPD, use of bronchodilators and atrial ectopics due to enlarged atria could lead to palpitations. Patients of hyperthyroidism with sinus tachycardia or atrial fibrillation will present as palpitations. Drugs like diet pills (amphetamines), cocaine, alcohol, tobacco, caffeine, chocolate can lead to palpitations.

Palpitations are the most common somatic symptom of panic anxiety.⁶

Palpitations are 43% cardiac, 31% psychiatric, 10% miscellaneous and 16% of unknown origin.³

In our study 48.7% were attributed to cardiac cause(hypertension, valvular heart disease, MVP, DCMP); 27.4% to miscellaneous causes like COPD, thyroid disorders and 23.9% due to anxiety.

The present evaluation showed 27.6% of holter studies to be abnormal significant, 39.3% with abnormal insignificant findings and 33.3% were normal.

Holter monitoring is a poor diagnostic test for intermittent palpitations. It is a good investigation in case of patients with daily palpitations.⁷

CONCLUSIONS

1. Almost 1/3rd i.e. 33.3% of the patients with palpitations had no arrhythmias.
2. Though 76% of palpitations were due to some cardiac or non cardiac condition atleast 24% could only be explained by psychiatric conditions like anxiety.

TABLE 1: PERCENTAGE OF PALPITATIONS IN VARIOUS DISEASES

Sr. No.	Disease	No. of patients	Percentage
1	Hypertension	34	29.1
2	DCMP	17	14.5
3	Thyroid disease	9	7.7
4	COPD	23	19.7
5	MVP	6	5.1
6	Anxiety disorder on treatment	28	23.9

TABLE 2: CATEGORISATION OF RHYTHM ABNORMALITIES

DIAGNOSTIC CATEGORY	DIAGNOSIS	TOTAL NUMBER
ABNORMAL SIGNIFICANT	BRADYARRHYTHMIA	
	AV Block- Second Degree-Mobitz I	1
	AV Block- Second Degree-Mobitz II	1
TACHYARRHYTHMIA	Complete AV Block	1
	Sinus Tachycardia HR >140	3
	Atrial Tachycardia HR >140	2
	New Onset Atrial Fibrillation	3
	Atrial flutter	1
	AVNRT	1
ABNORMAL INSIGNIFICANT	Ventricular Tachycardia- III sustained	6
	VPCs (>10% of total QRS)	13
	BRADYARRHYTHMIA	
TACHYARRHYTHMIA	Sinus bradycardia (HR 40-60 bpm)	1
	Sinus tachycardia (HR 100-120 bpm)	3
	A. fibrillation/flutter known	12
	APCs including bigeminy and trigeminy	17
	VPCs (<10 % of total QRS)	13

FIGURE 1: AGE AND SEX WISE DISTRIBUTION OF ALL PATIENTS (JANUARY 2014 TO MARCH 2015)

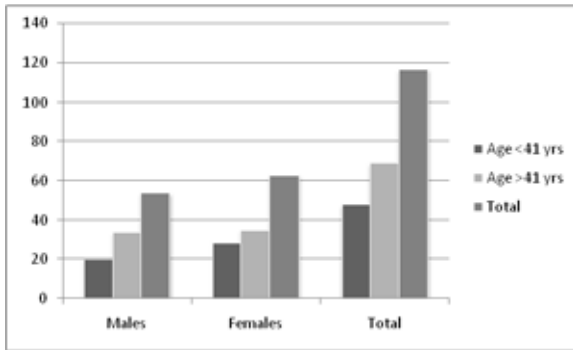
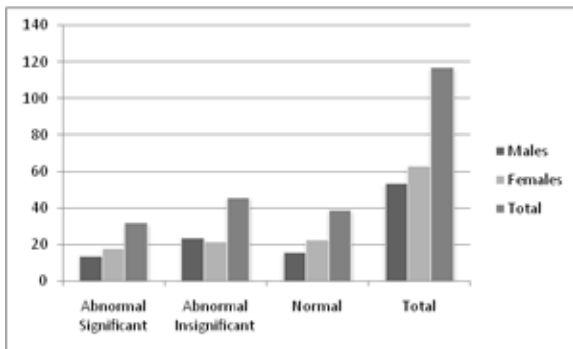


FIGURE 2: SEXWISE DISTRIBUTION IN VARIOUS CATEGORIES



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