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Prevalence of Diastolic Dysfunction Among Hypertensive Patients Evaluated in Cardiac Centre.

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ABSTRACT

The present study was undertaken to assess the prevalence of diastolic dysfunction in hypertensive patients and to determine the association of diastolic dysfunction and hypertension with selected clinical variables. We conclude that the prevalence of diastolic dysfunction among hypertensive patients was alarmingly high and there is no correlation between gender, occupation with diastolic dysfunction and prevalence rate of diastolic dysfunction was significantly higher among the 30% of hypertensive patients. ie; those within 30 to 50 years of age range. The study group consisted of small homogeneous group of hypertensives. Hence, the prevalence of diastolic dysfunction obtained in the current study may not be identical when applied to a larger or different population of hypertensives. Hence we recommend further study with larger population to confirm the results.

Keywords: Diastolic dysfunction, Hypertensive patients

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INTRODUCTION

Hypertension is a common disease associated with high morbidity and mortality. The disease is a silent threat to the health of people all over the world. It is suggested that hypertension has its origin in childhood but goes undetected unless specifically looked for during this period. Thus, early detection of hypertension and its precipitating or aggravating factors are important if one is to evolve measures so that complications of hypertension can be prevented. Hypertension is a chronic illness that affects people of all age groups, both sexes and at the same time cuts across all socio-economic classes. It is said to exist when the value of the systolic blood pressure is equal to or greater than 140 mmHg, and the diastolic blood pressure is equal to or greater than 90 mmHg [1]. Hypertension is an important public health challenge in both economically developing and developed countries [2,3]. Significant numbers of individuals with hypertension are unaware of their condition and, among those with diagnosed hypertension, treatment is frequently inadequate, measures are required at a population level to prevent the development of hypertension and to improve awareness, treatment and control of hypertension in the community [4]. Overall the prevalence of hypertension in all regions increases with age more steeply in women. Increasing obesity and sedentary life style has a significant repercussion on hypertension. By age of 60, more than half of the adults in most regions of the world will be hypertensive. These alarming figures highlights that hypertension is set to remain the single most important preventable cause of premature death worldwide over the next two decades with the highest rates in Latin America and the Caribbean, former Socialist republics and Sub Saharan Africa [5]. The present study was undertaken to assess the prevalence of diastolic dysfunction in hypertensive patients and to determine the association of diastolic dysfunction and hypertension with selected clinical variables.

MATERIALS AND METHODS

The present study has been approved by institute ethics committee for human studies. A total of 100 male and female patients undergone Doppler echocardiography., Little Flower Hospital, Angamaly, were included in the study, after explaining the study to the participants, written informed assent from the participants was obtained.

Inclusion Criteria

- Hypertensive patients who undergone Doppler echocardiography.

Exclusion Criteria

- Subjects having no hypertension.

Tools And Techniques:

Tool 1

Socio demographic proforma

Tool 2

Echocardiography

Technique: sociodemographic variables and echo results were taken from the medical records.

Data analysis

The collected data was coded and processed by using SPSS 20.0. Descriptive analysis using standard statistical methods was performed. The tests used are frequencies, percentage and chisquare test.

RESULTS

Results are presented in table no 1 to 6 and figure number 1 to 4.

Table 1: Frequency distribution and percentage of hypertensive patients based on sex and occupation. (n=100)

Socio- demographic characteristics	Frequency	Percentage
Sex		
Male	51	51
Female	49	49
occupational status		
Employed	47	47
Unemployed	53	53

Figure 1: Agewise prevalence of DD among Hypertensives

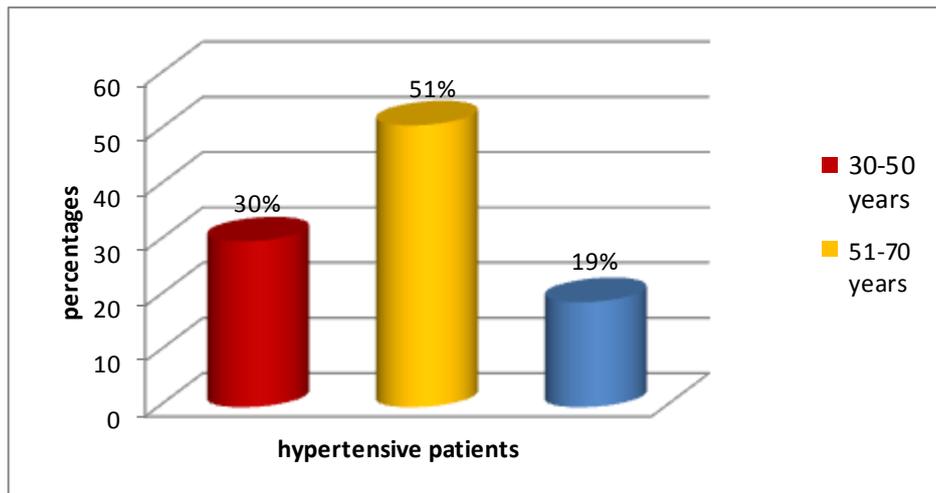


Table 2: Frequency distribution and percentage of hypertensive patients based on the period prevalence of diastolic dysfunction

Period	Number of total cases	total sample	prevalence rate/1000population
from January 2014 to March 2014	58	100	580

Figure 2: Prevalance of DD among Hypertensives

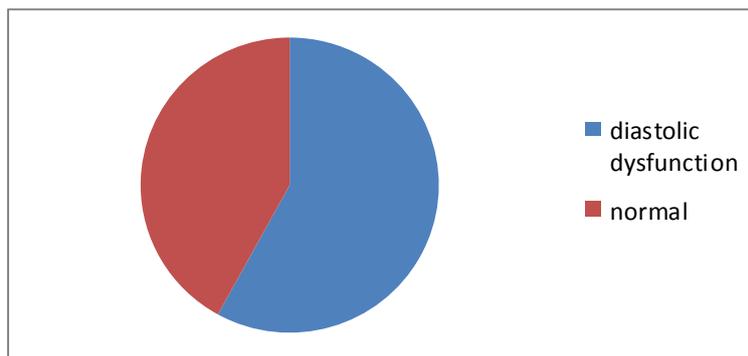


Table 4: Association of diastolic dysfunction with age. (n=100)

Age in years	Diastolic dysfunction		χ^2 10.7***
	present	absent	
30-50	10	20	
51-70	35	16	
71-90	13	6	

** significant at 0.01 level of significance

Table 5: Association of sex with diastolic dysfunction. (n=100)

Sex	Diastolic dysfunction		χ^2
	present	absent	
Male	29	22	0.055
Female	29	20	

P value ($p > 0.05$) not significant.

Figure 3: Genderwise prevalence of diastolic dysfunction

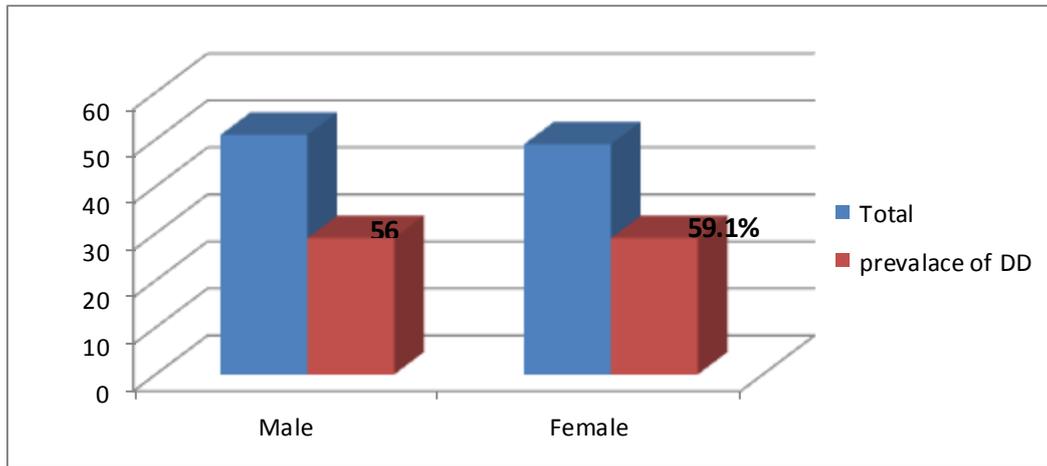
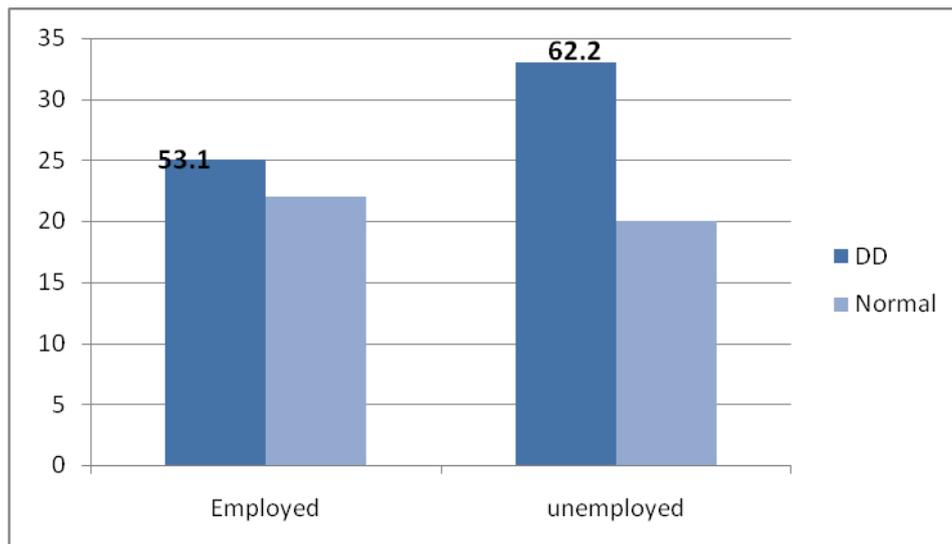


Table 6: Association of diastolic dysfunction with occupational status. (n=100)

Occupation	Diastolic dysfunction		χ^2
	present	absent	
Employed	25	22	0.84
Unemployed	33	20	

P value ($p > 0.05$) not significant.

Figure 4: Prevalence of diastolic dysfunction in relation to occupational status.



DISCUSSION

Diastolic dysfunction is a common complication of chronically elevated blood pressure and it is the first discernible manifestation of heart disease in hypertensive patient [6,7]. Pulsed Doppler transmitral

echocardiography can detect left ventricular (diastolic) filling abnormalities in patients with hypertension even before any clinical or electrocardiographic abnormalities are present. In the present study we have observed that there is high prevalence of diastolic dysfunction among hypertensive patients and there is no association between diastolic dysfunction with sociodemographic variables like sex and occupation but the prevalence rate of diastolic dysfunction was significantly higher among a particular age group.

CONCLUSION

We conclude that the prevalence of diastolic dysfunction among hypertensive patients was alarmingly high and there is no correlation between gender, occupation with diastolic dysfunction and prevalence rate of diastolic dysfunction was significantly higher among the 30% of hypertensive patients, i.e.; those within 30 to 50 years of age range.

Limitations:

The study group consisted of small homogeneous group of hypertensives. Hence, the prevalence of diastolic dysfunction obtained in the current study may not be identical when applied to a larger or different population of hypertensives. Hence we recommend further study with larger population to confirm the results.

REFERENCES

- [1] Chobanian A.V, Bakris GL, Black HR, Cushman WC, Green LA, Izzo JL Jr, et al. J Amer Med Assoc 2003; 289: 2560 -2572.
- [2] Cooper RS et al. British Med J 1998, 316:
- [3] Montgomery R. British Med J 1998, 317: 76.
- [4] Setel P et al. Morbidity and Mortality Weekly Report 2000, 49: 416-419.
- [5] Vasan RS et al. JAMA 2002; 287:1003-10]
- [6] Iriarte MM, Perez OJ, Sagastogitia JD, Molinero E, Murga N. Am J Cardiol 1995;76(13):43D-47D.
- [7] Fouad FM. Cir 1987;75 (Suppl 1):148-155.