Original Research Article

A study on Assessment of adherence to medication among hypertensive patients in rural area, Kancheepuram district, Tamil Nadu.

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Abstract

Background: Hypertension is the one of the major preventable non-communicable disease. It exerts a public health burden on cardiovascular diseases, stroke and renal diseases worldwide. The prevalence of hypertension in India is 29.8%. The treatment for hypertension is usually lifelong and this brings about problems regarding patient compliance. So, this study aims at evaluating the treatment adherence for patients with hypertension. **Objectives:** To assess patient's adherence to hypertensive treatment and to analyze the association between various socio-demographic factor and adherence to anti- hypertensive treatment. **Methods:** The study was carried out as a cross sectional study among 430 hypertensive patients, using simple random sampling technique in the field practice area of a medical college. The patient's adherence was assessed using Morisky's Scale consisting of 4 questions and the reason for non-adherence was studied. Grading was done based on answers marked and analyzed using SPSS. **Results:** The prevalence of adherence to hypertensive medication by the patients was found to be 25.1%. Various reasons such as age, female sex, illiteracy and knowledge about normal blood pressure were identified for non-adherence. This study showed a new insight to the problem. **Conclusion:** The prevalence of patient's adherence to hypertension management was only 25.1% in this study population. The poor adherence will definitely affect the health of the individual leading to many complications. It is our duty to increase the adherence to medication by addressing the issues through various health programmes and health education.

Keywords: Patient Compliance, Non- Communicable Disease, Blood Pressure.

INTRODUCTION:

Non-communicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors [1]. People of all age groups, regions and countries are affected by NCDs. These conditions are often associated with older age groups, but evidence shows that 17 million of all deaths attributed to NCDs occur before the age of 70. Of these "premature" deaths, 87% are estimated to occur in low- and middle-income countries [1]. Children, adults and the elderly are all vulnerable to the risk factors contributing to NCDs, whether from unhealthy diets, physical inactivity, and exposure to tobacco smoke or the harmful use of alcohol. Among the various non-communicable diseases, hypertension, diabetes and cancers are of global burden.

Hypertension also known as high blood pressure is a long term medical condition in which the blood pressure in the arteries is persistently elevated.Blood pressure is expressed by two measurements, the systolic and diastolic pressures, which are the maximum and minimum pressures, respectively. As per JNC 8 guidelines, in patients 60 years or older who do not have diabetes or chronic kidney disease, the goal blood pressure level is now <150/90 mm Hg.In patients 18 to 59 years of age without major co morbidities, and in patients 60 years or older who have diabetes, chronic kidney disease (CKD), or both conditions, the new goal blood pressure level is <140/90 mm Hg [2].Raised blood pressure is a major risk factor for coronary heart disease and ischemic as well as hemorrhagic stroke. It is a major health problem in developing and developed countries, and its increasing incidence is a serious warning to take more attention to this silent disease. In 2015, there were 1.13 billion people living with high blood pressure worldwide [1]. The

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prevalence of hypertension worldwide is of about 40% [1]. In India, the prevalence is around 29.8 %. In Tamil Nadu, the prevalence is of about 19.1% [3].

Adherence to anti-hypertensive medications has been found to be a major concern. This study aims at assessing the adherence to hypertensive medications and to analyze the association between various socio demographic factors and adherence to hypertensive treatment.

METHODOLOGY:

This study is acommunity based descriptive cross sectional study conducted in the rural field practice area (Padappai) of Sree Balaji Medical College and Hospital in Kancheepuram district, Tamil Nadu. The Study periodwas6 Months (October 2016 to March 2017).The study population includes hypertensive patients belonging to all age group and who are under medication for at least 6 months. Those not willing to participate in the study and those patients who are mentally retarded and pre-eclampsia patients were excluded from the study. Based on the study done by Venkatachalam J et al in the year 2015 in Kancheepuram, TamilNadu the sample size was calculated (The percentage of adherence to Hypertensive treatment was 24.1%) [4].The sample size was calculated with 95% confidence interval and a precision of 18% of the prevalence using the formula $4pq/l^2$ where p is 24.1, q is 75.9 and l is 4.32 .Also accounting 10% for non response the final sample size was adjusted to 430. From the 600 registered hypertensive patients who are taking treatment from the field practice area 430 samples were selected using simple random sampling method with the help of computer generated random number tables. Using a pre- tested structured questionnaire containing socio demographic details, details regarding treatment adherence, morisky's 4 item questionnaire. The adherence to hypertensive medication was assessed using morisky's medication adherence 4 item questionnaire which consists of 4 questions. Response to the questions was of yes or no type, if the patient gives a negative response for all the 4 questions it means adherence is present. If the response is yes for any one of the 4 questions it means the patient is non adherent. The data was entered in MS excel and analyzed using SPSS 15 version. Descriptive statistical analysis done by using the percentage, proportions and statistical association calculated using the chi-square test and p value estimation. Informed consent was obtained from all the participants.

RESULT:

Table 1 depicts the socio demographic characteristics of the study participants. 51.2% of the study participants belonged to 41 to 60 years of age. 46.3% were males and 53.7% were females. Almost 86.5% were married. 30.9%

were primary school followed by 24.4% who had a middle school qualification and 20% who had high school education. 38.4% are suffering from hypertension for less than 5 years while the rest are suffering from hypertension for more than 5 years. 61.4% have a negative family history for hypertension.

Table 1:SOCIO DEMOGRAPHIC CHARACTERISTICS OF THE STUDY PARTICIPANTS

S.NO	SOCIO – DEMOGRAPHIC CHARACTERISTICS		FREQUENCY (N=430)	PERCENTAGE
1	AGE	21-40	87	20.20%
		41-60	220	51.20%
		61-80	111	25.80%
		More than 80	12	2.80%
2	SEX	Male	199	46.30%
		Female	231	53.70%
3	MARITAL STATUS	Married	372	86.50%
		Unmarried	22	5.10%
		Widow	36	8.40%
4	EDUCATION	Illiterate	21	4.90%
		Primary School	133	30.90%
		Middle School	105	24.4.%
		High School	86	20%
		Graduate	40	9.30%
		Post Graduate	45	10.50%
5	DURATION OF HYPERTENSION	Less than 5 years	165	38.40%
		5 – 10 Years	163	37.90%
		More than 10 years	102	23.70%
6	FAMILY HISTORY	Yes	166	38.60%
		No	264	61.4.%

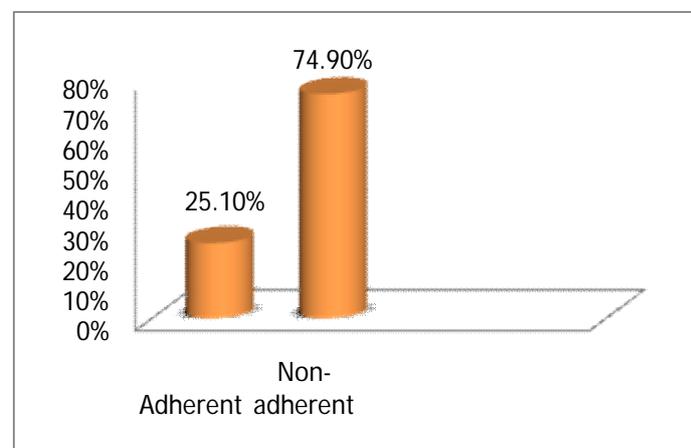**Figure:1ADHERENCE TO ANTI- HYPERTENSIVE DRUGS**

Fig 1 represents the percentage of hypertensive patient's adherent and non adherent to the treatment. 25.1% of the hypertensive patients are adherent to treatment while

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74.9% were found to be non adherent to hypertensive medication.

Table :2ASSOCIATION BETWEEN SOCIO-DEMOGRAPHIC FACTORS AND ADHERENCY TO ANTI-HYPERTENSIVE MEDICATION.

SOCIO – DEMOGRAPHIC CHARACTERISTICS		Adherent (108)	Non-Adherent (322)	Chi Square	Degrees of freedom	P Value
AGE	21-40	9 (8.3%)	78 (24.2%)	22.119	3	0.000*
	41-60	60 (55.5%)	160 (49.6%)			
	61-80	31 (28.7%)	80(24.8%)			
	More than 80	8 (7.4%)	4 (1.2%)			
SEX	Male	45 (41.6%)	154 (47.8%)	1.234	1	0.267
	Female	63 (58.3%)	168 (52.1%)			
EDUCATION	Illiterate	0 (0%)	21 (6.5%)	19.986	5	0.001*
	Primary School	31 (28.7%)	102 (31.6%)			
	Middle School	23 (21.2%)	82 (25.4%)			
	High School	32 (29.6%)	54 (16.7%)			
	Graduate	15(13.8%)	25(7.7%)			
	Post Graduate	7(6.4%)	38(11.8%)			
DURATION	Less than 5 years	41 (37.9%)	124 (44%)	2.312	2	0.315
	5 -10 Years	36 (33.3%)	127 (39.4%)			
	More than 10 Years	31 (28.7%)	71 (22%)			
KNOWLEDGE ABOUT NORMAL BLOOD PRESSURE	Yes	82(75.9%)	125(38.8%)	44.6	2	0.000*
	No	26(24.1%)	197(61.1%)			

*P value less than 0.05, which is statistical significant.

Table 2 shows the association between socio-demographic factors and adherence to hypertensive medications. There is a statistically significant association between various socio-demographic factors such as sex, education, knowledge about normal blood pressure with non-adherence to hypertensive medications. People belonging to the age group 41-60(49.6%) are more non-adherent to anti-hypertensive treatment when compared to other age groups. Females (52.1%) are more non-adherent than males (47.8%). People with primary school education (31.6%) are more non-adherent. People with poor knowledge about the normal blood pressure (61.1%) are non- adherent when compare to those who are having good knowledge about the normal blood pressure.

DISCUSSION:

Blood pressure control in hypertension patients was being considered as a long-standing challenge. We were living in a rapidly changing environment. Throughout the world, human health was being shaped by the same powerful forces: demographic ageing, rapid urbanization, and the globalization of unhealthy lifestyles [5]. One of the key risk factors for cardiovascular disease is hypertension. Hypertension kills millions of people every year. But this risk did not need to be so high. Hypertension can be prevented.

The overall adherence to medication in our study was 25.1%as compared to a similar study, the adherence was 24.1% in a study by J. Vengatachalam, in kancheepuram district, tamil nadu[4] , also compared to an Iranian study by Hadi which was 48.7%[6] This variation might be due to difference in sociodemographic profile of two countries and 24% in a Malaysian study by Kamran.A[3] which was also because of the same reason as mentioned before. In our study, non- adherence was found to be higher among people age group between 41-60 years of age (49.6%) and females (52.1%) being non-adherent and also primary school qualified people (31.6%) were more non-adherent to anti-hypertensive medication. Similarly in a study from Iraq, Erbil city by Qadir[7], the compliance was less among patients aged 46-55years of age(50%) and females(62.7%)were significantly more non-compliant than males and also primary school qualified people(90.2%) were non-adherent towards anti-hypertensive medication . Another study carried out in Pakistan among 460 hypertensive, showed that adherence increases with age and highest mean adherence rate was in the age group of 70-80 years [8]. This might be due to the support given by care takers.

CONCLUSION:

In this study the prevalence of patient's adherence to hypertensive medication was found to be only 25.1%, which is very low. The association between non-adherence and various socio demographic factors such as age, literacy, knowledge about normal blood pressure and family history was statistically significant. Interventions aimed at building adherence in hypertension patients are very much essential to prevent further complications.

RECOMMENDATIONS

Poor adherence affects blood pressure control. Developing intervention programs to address some of the factors identified is necessary to improve adherence and, in turn, to improve blood pressure control. A multidisciplinary approach with greater involvement of patients in managing their conditions should be adopted to promote better adherence. Counselling to improve compliance to anti-hypertensive medication by the treating physician at primary care level itself is important. It is also recommended to improve the knowledge and perception about the complications and consequences due to non-adherence.

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