THERAPEUTIC COMPLIANCE AND RISK OF STROKE AMONG PATIENTS WITH HYPERTENSION AT A SELECTED HOSPITAL IN KOCHI

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ABSTRACT

Background of the study: According to WHO hypertension exits worldwide at epidemic rates affecting an estimated 1 billion people. Hypertension is directly responsible for 57% of stroke death and 24% of coronary artery disease death in India. The present study was intended to assess therapeutic compliance and risk of stroke among patients with hypertension. **Objective:** The objective of the study were to assess correlation between therapeutic compliance and risk of stroke among patients with hypertension. **Methodology** The research design adopted by researcher was descriptive correlational design. The study was conducted in General medicine OPD of AIMS, Kochi. Hundred samples were selected by convenient sampling method. The socio-demographic data was gathered by semi-structured questionnaire. The therapeutic compliance was assessed by Hill Bone high blood pressure compliance scale and risk of stroke was assessed by stroke risk scorecard. **Results:** The findings revealed that there was a negative low degree correlation between therapeutic compliance and risk of stroke among patients

with hypertension. **Conclusion:** Thus it was concluded that when therapeutic compliance is increasing and risk of stroke is decreasing and the relationship is not statistically significant.

Key words: Coronary artery disease**,** Hill Bone high blood pressure compliance scale, Hypertension, Stroke, stroke risk score card, Therapeutic compliance.

Introduction

According to the World Health Organization the main determinants of health include the social and economic environment, the physical environment, and the person's individual characteristics and behaviors. The lifestyle changes in the present world leads to many diseases such as hypertension, diabetes mellitus, cardiac diseases, renal diseases and brain diseases can lead to stroke.[1]

The diseases which are associated with life style are known as life style related diseases; hypertension is one of the life style related diseases. As blood pressure increases the risk of myocardial infarction, heart failure, stroke, adrenal disease also increases.[2]

The risk factors for stroke are out of our control, several can be kept in line through proper nutrition and medical care. Risk factors for stroke include the following above age 55, family history of stroke, high blood pressure, high cholesterol, smoking cigarettes, obesity and overweight, cardiovascular disease, previous stroke or transient ischemic attack (TIA), high levels of homocysteine (an amino acid in blood), control pills or other hormone therapy, cocaine use etc.[3]
World Health Organization report 2012 showed that one out of three deaths in India is due to heart disease. Hypertension is directly responsible for 51% of stroke death and 45% of all CAD in India.

Hypertension is a reversible risk factor underlying the pathogenesis of stroke.Previous clinical trials have confirmed the role of antihypertensive medications (AHMs) for the prevention of stroke.AHM adherence, defined as the extent to which patients take medications as prescribed by their physicians, is also an important determinant for the preventative effect of AHM for stroke.Previous studies have reported that poor adherence to AHM appeared to be associated with an increased risk for stroke incidence or recurrence in patients with hypertension.[9]

According to WHO hypertension exits worldwide at epidemic rates affecting an estimated 1 billion people .[5] Compliance to medications and lifestyle modifications is important in the management of hypertension.[11]Hypertension is directly responsible for 57% of stroke death and 24% of coronary artery disease death in India.[4]A strict control on the comorbid conditions and sticking on to the medications can prevent the occurrence of future stroke.[13]The present study was intended to assess the correlation between therapeutic compliance and risk of stroke among patients with hypertension.

Objectives

1.To find correlation between the therapeutic compliance and risk for stroke among patients with hypertension.

Materials and methods

Research design: Descriptive correlational design

Setting: The present study was conducted in General Medicine OPD at AIMS, Kochi.

Population: Patients who were diagnosed to have hypertension and are taking treatment at AIMS, Kochi

Sample size: 100 patients with hypertension

Sampling technique: Non –probability convenient sampling technique.

Inclusion criteria:

Patients with hypertension who were

- Available during the period of data collection.
- 30-70 years of age.
- Able to read and write Malayalam and /or English.

Exclusion criteria:

- Those who had pregnancy induced hypertension.
- Hypertensive patients who were already diagnosed with stroke

Description of research tool:

Tool 1: semi-structured questionnaire to assess socio demographic and clinical variables

This section include

a) Demographic data like age, gender, education, occupation, monthly income, marital   status, area of residence, life style habits, family history.

b) Clinical data like duration of illness, associated co-morbidities, use of alternative therapies and history of complication.

Tool 2: Hill Bone High Blood Pressure Compliance Scale to assess level of compliance among patients with hypertension.[1]

The level of compliance was assessed using Hill Bone High Blood Pressure Compliance Scale developed by Hill M N, Bone L R, and Kim M T. The tool focused on 3 domains: medication intake, reduced sodium intake, and appointment keeping. The scale has 14 items with a four point response format: (1) never, (2) some of times, (3) most of time (4) all of time. The total score range from 14 (minimum) to 56 (maximum.) Scoring was categorized into three:

a. Good compliance(14-28)
b. Average compliance(29-42)
c. Poor compliance(43-56)

Tool 3: stroke risk scorecard developed by national stroke association to assess the risk of stroke among patients with hypertension.[5]

The factors assessing in this scorecard is blood pressure, atrial fibrillation, smoking, cholesterol, diabetes, exercise, diet, stroke in family. Scoring is categorized into three:

a. High Risk:17-24
b. Caution: 2-16
c. Low risk: 1-8

Results

The present study was intended to assess the correlation between therapeutic compliance and risk of stroke among patients with hypertension in selected OPD at AIMS, Kochi. Here deals with analysis and interpretation of data collected from 100 hypertensive subjects who were attending general medicine OPD.

- Among 100 patients with hypertension majority of the subject belongs to the age group of 61-70 years (50%) and 31% of subjects belong to the subject group of 51-60, 13% of age group belongs to age group of 41 -50, 2% of the subjects belong to age group of 30-40 and out of 100 patients with hypertension majority of subject belongs to female (51%) and 49% of subject belongs to male.
- Out of 100 patients with hypertension   majority of subject (75%) were non alcoholic, 15% were alcoholic and 10% were ex alcoholic and out of 100 subjects 88% were non smoker, 9% were ex smokers and 3% were smoker and out of 100 subjects 40% were vegetarian and 60% were non vegetarian. Out of 100 patients with hypertension 51% were having family history of hypertension and 49% don't have family history of hypertension.
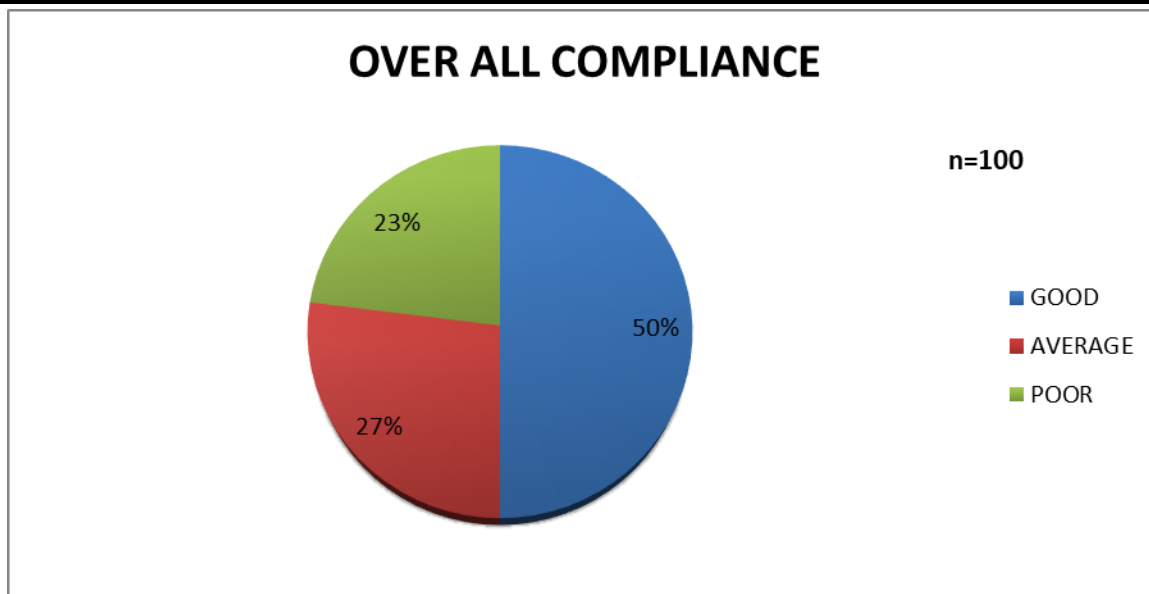
   Figure 1

Figure 1 depicts that out of 100 patients with hypertension majority of subject (50%) had good compliance, 27% had average compliance and 23% had poor compliance.
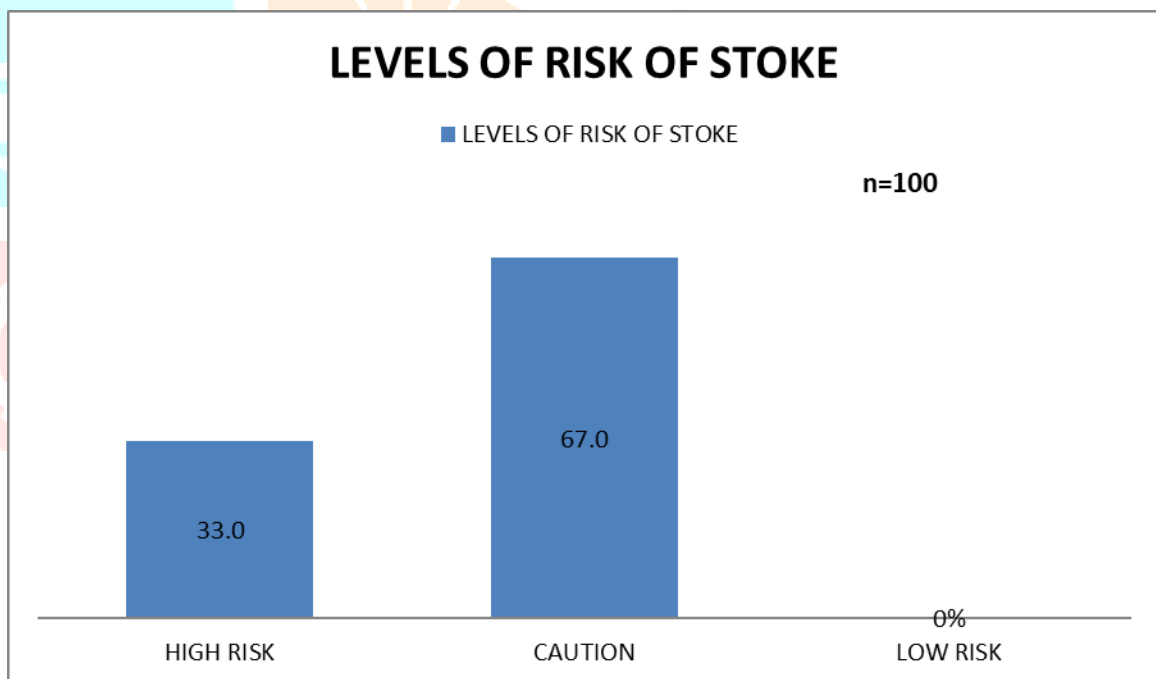
Figure 2

Figure 2: depicts that, out 100 patients with hypertension majority of subject (67%) were in caution ,33% were at high risk towards stroke and no one was at low risk of stroke

Table 1: Comparison between therapeutic compliance and risk of stroke

n=100

Therapeutic compliance	Risk of stroke	
	Caution(%)	High risk(%)
Good	74	26
Average	55.6	44.4
Poor	65.2	34.8

Table 1 reveals that 74% of subjects with good compliance belongs to caution and 26% were in high risk.65.2% of subject with poor compliance belongs to caution and 34.8% were in high risk

Table 2: correlation between therapeutic compliance and risk of stroke

Therapeutic compliance and risk of stoke	
r value	-0.002
P value	0.984
N	100

Table 2 reveals that, there was a negative low degree correlation between therapeutic compliance and risk of stroke among patients with hypertension indicating if therapeutic compliance is increasing and the risk of stroke decreasing and the relationship is not statistically significant with p=0.984

Discussion

Hypertension remains a challenging medical condition among the non communicable diseases of ever growing population.[10]The present study aims to assess correlation between therapeutic compliance and risk of stroke among patients with hypertension.Study reveals that, there if therapeutic compliance is increasing and the risk of stroke decreasing. The study finding is congruent with the case-control study was conducted in Gaza Strip among 112 patients, who had been hospitalized for acute stroke and history of hypertension, and 224 controls with history of hypertension.[7] They concluded that an increase in compliance with the pharmacological and non-pharmacological therapeutic regimen might be a key to a reduction of stroke incidence and prevalence among hypertensive patients. A Population-based study using electronic medical and prescription records from Finnish national registers in 1995 to 2007. Of the 58,266 hypercholesterolemia patients age 30+ years without pre-existing stroke or cardiovascular disease, 532 patients died of stroke (cases), and 57,734 remained free of incident stroke (controls) during the mean

follow-up of 5.5 years. They captured year-by-year adherence to statin and antihypertensive therapy in both study groups and estimated the excess risk of stroke death associated with non adherence.[8]They concluded that individuals with hypercholesterolemia and hypertension who fail to take their prescribed statin and antihypertensive medication experience a substantially increased risk of fatal stroke. The risk is lower if the patient is adherent to either one of these therapies.

A cross-sectional descriptive comparative study was carried out at Teaching Hospital Jaffna, from January 2017 to April 2017. Hypertensive patients were recruited by systematic randomized controlled sampling Poor compliance is a common and important challenge leading to treatment failure in clinical practice . It is a barrier to effective management of hypertension. Most of patients (84.5%) had poor compliance of drugs in this study. The forgetfulness and interruptions of daily routine were common reasons for non adherence.Findings is incongruent with the present study that is out of 100 patients with hypertension majority of subject (50%) had good compliance, 27% had average compliance and 23% had poor compliance.

A descriptive study was conducted in kerala among 70 hypertensive paptients and 70 non hypertensive patients ,they found that awareness regarding stroke and its prevention was average even among hypertensive patients so intense educational need for high risk group.[12]In the present study out 100 patients with hypertension majority of subject (67%) were in caution ,33% were at high risk towards stroke and no one was at low risk of stroke.

Limitations

- Hypertensive patients who were already diagnosed with stroke were not included in the study.
- Study is limited to 100 subject
- Generalization of the findings is limited due to small sample size.

Recommendations

- A similar study can be conducted in large number of sample and at different settings- Government, Co operative and Private sector.

Compliance with ethical standard:

The study was initiated after obtaining permission from the Ethics committee. This studies does not contain any studies with animals performed by the author

Conclusion

The conclusion drawn from the study were , there was a negative low degree correlation between therapeutic compliance and risk of stroke among patients with hypertension indicating, if therapeutic compliance is increasing and the risk of stroke decreasing and the relationship is not statistically significant

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Conflicts of interest: There is no conflict of interest among the authors

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