ROLE OF MONTHLY CHECK UP OF BLOOD PRESSURE IN A FREE HEALTH CAMP (A FIFTEEN YEARS FOLLOW UP STUDY)

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ABSTRACT

BACKGROUND

Cardiovascular disease is one of the commonest cause of death worldwide. High blood pressure increases the risk of cardiovascular disease. Even in the developed countries, most of the patient with high blood pressure are unaware of their high blood pressure and not under medication; 25% rural Indians are hypertensive. Of these, 25% rural Indians are aware of their hypertensive status. Only 25% rural Indians are being treated for hypertension. One-tenth of rural and one-fifth of urban Indian hypertensive population have their BP under control.⁽¹⁾

OBJECTIVES

1. To detect the hypertensive patient amongst the adult attended, the free health camp on 6th June 2001.
2. Follow up all the detected hypertensives on 4th Sunday of every month with a target to keep the blood pressure systolic below 140 mmHg and diastolic below 90 mmHg by providing free medicine and necessary advice from the Charitable Heart Care Centre, Udarbond.
3. To see the effect of long-term follow up of these patients and to detect complications if any.

METHODS

A free health camp was organised on 6th June 2001 at village Udarbond of Cachar District of Assam. Hypertensive patients were detected from the adult attended the free camp. They were asked to attend the Charitable Heart Care Centre every 4th Sunday for regular check up of their blood pressure and to take the necessary medicine and advice free.

RESULTS

Of the total 250 (150 males and 100 females) adults attended the free health camp, 50 (20%) were hypertensive. Of the 150 males 30 (20%) and of the 100 females 20 (20%) were hypertensive. After 15 years follow up, out of 30 males 3 (10%) died and 2 (6.66%) dropped out. Of the 30 males, 1 (3.33%) died of myocardial infarction, 1 (3.33%) died of cerebral stroke and 1 (3.33%) died of cerebral malaria. Of the 20 females, 2 (10%) died of cerebral stroke and 3 (15%) dropped out. Of the 50 hypertensives, 40 (80%) are attending the camp till date. Of the 30 males 25 (83.33%) and of 20 females 15 (75%) are still surviving; 16 (53.33%) of 30 males attended the health camp on 6th June 2001 and 16 (64%) of 25 males presently attending the camp and 10 (50%) of 20 female hypertensives on 6th June 2001 and 10 (66.66%) of 15 females presently attending the camp achieved the target blood pressure systolic below 140 mmHg and diastolic below 90 mmHg. Total 26 (52%) of 50 hypertensives on 6th June 2001 and 26 (65%) of 40 patients attending the camp regularly till date could achieve the target blood pressure.

CONCLUSION

From the above study, it is concluded that regular monthly check up of blood pressure and its treatment and advice could keep blood pressure under control and lower the incidence of CVDs death due to hypertension.

KEYWORDS

Hypertension, India, Rural, Monthly.

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INTRODUCTION

About 33% urban and 25% rural Indians are hypertensive. Of these, 25% rural and 42% urban Indians are aware of their hypertensive status. Only 25% rural and 38% of urban Indians are being treated for hypertension.

One-tenth of rural and one-fifth of urban Indian hypertensive population have their BP under control.⁽¹⁾ Previously, a systematic review on the prevalence of HTN in India for studies published between 1969 and July 2011, reported a range between 13.9 to 46.3% and 4.5 to 58.8% in urban and rural areas of India, respectively.⁽²⁾

In an analysis of worldwide data for the global burden of HTN, 20.6% of Indian men and 20.9% of Indian women were suffering from HTN in 2005.⁽³⁾ Recent studies from India have shown the prevalence of HTN to be 25% in urban and 10% in rural people in India.^(4,5,6,7) Hypertension (HTN) exerts a substantial public health burden on cardiovascular health status and healthcare systems in India.^(8,9) It is estimated that by 2020, CVDs will be the largest cause of mortality and morbidity in India.⁽¹⁰⁾

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Hypertension is a major risk factor for CVDs including stroke and myocardial infarction and its burden is increasing disproportionately in developing countries, as they undergo demographic transition.^(11,12,13)

Using a cut-off of 140 mmHg or greater systolic Blood Pressure (BP) or 90 mmHg or greater diastolic BP, the age-standardised prevalence of hypertension worldwide in the year 2000 was estimated to be 26.6% in men (95% confidence interval, CI 26.0 to 27.2) and 26.1% in women (95% CI 25.5 to 26.6). This was estimated to rise to 29.0% in men (95% CI 28.6 to 29.4) and 29.5% in women (95% CI 29.1 to 29.9) by 2025. Hypertension (HTN) is directly responsible for 57% of all stroke deaths and 24% of all Coronary Heart Disease (CHD) deaths in India.⁽⁴⁾

Aim of the Study are

1. To detect the patient with hypertension amongst the adult patients attended the free health camp organised on 6th June 2001 in the village of Udarbond in the Cachar district of Assam by the Charitable Heart Care Centre of table tennis club as a part of their social service.
2. To follow up all the hypertensive patients monthly on 4th Sunday of every month.
3. To do ECG and some preliminary test free of cost.
4. To provide them free medicine and advice from the charitable heart care centre.
5. To see the effect of regular check-up blood pressure and its treatment.
6. To detect the complications of hypertension if any.

MATERIALS AND METHODS

Period of Study: From 6th June 2001 to till date.

Place of Study: Charitable Heart Care Centre of Table Tennis Club of Udarbond.

Follow up: Monthly follow up on 4th Sunday of every month.

Investigation: Routine investigation, Urine Blood Sugar, Blood Urea, S. Creatinine, ECG.

Medication: Free medicine was provided from the centre.

Source of Medication: Physician sample provided by various pharmaceutical companies, physician sample collected from local physician, physician sample collected by Ramakrishna Mission Silchar and donated to the centre and sometimes medicine was purchased by the centre from their fund.

Inclusion Criteria

Patient above 30 years of age with blood pressure systolic above 140 mmHg and diastolic above 90.

Exclusion Criteria

Patient with,

1. Diabetes
2. Kidney Disease.
3. Stroke.
4. Ischaemic Heart Disease.
5. CHF.
6. COPD.

WERE EXCLUDED FROM THE PRESENT STUDY

Target Blood Pressure

Target blood pressure was systolic below 140 mmHg and diastolic below 90 mmHg.

Control Group for Comparison

For ethical reason control group of patients with hypertension who will be without medication were not kept.

Compliance

Compliance was determined that those patients came to the camp on every 4th Sunday for BP check-up, medication and advice. Absence for two or more consecutive months was considered as noncompliance. Medicine were supplied for whole one month as per need of patient.

Drug Protocol

Medicine were supplied as per need of the patients (Tailor-made protocol). Mostly Hydrochlorothiazide, Amlodipine, Beta Blocker, ARV and ACE inhibitors were used.

Resistant Hypertension

Those patients who could not achieve the target blood pressure after receiving 3 drugs with different mechanism of action, one being thiazide diuretic.

Result and Observations

Doctors present in the Health Camp on 6th June 2001.

Dr. Dipankar Deb, then Registrar of Cardiology SMCH, now Associate Professor of Medicine SMCH.

Dr. M. Nath, Retd. Professor and HOD of Cardiology, SMC.

Dr. S.R. Bhattacharjee, Retd. Professor of Medicine, SMC.

Total no of patients present in the free health camp on 6th June 2001: 250 (Male-150, Female-100).

Total no. of patients detected to be hypertensive:- 50 (20%) Male 30 (20%) and Female 20 (20%).

All the patients with hypertension were advised to come to the centre every month on 4th Sunday for check-up and for collection of medicine.

Patient Profile

Age Group	Male N-30	Female N-20	Total N-50
30 to 40 yrs.	1 (3.33%)	Nil	1 (2%)
41 to 50 yrs.	5 (16.66%)	2 (10%)	7 (14%)
51 to 60 yrs.	10 (33.33%)	10 (50%)	20 (40%)
61 to 70 yrs.	8 (26.66%)	4 (20%)	12 (24%)
Above 71 yrs.	6 (20%)	4 (20%)	10 (20%)

Table 1: Profile of Hypertensive Patients

Blood pressure ranges of the selected patients are shown in Table No. II.

B.P. Range	Male N-30	Female N-20	Total N-50
140-159/90-99 mmHg	10 (33.33%)	8 (40%)	18 (36%)
160-179/100-109 mmHg	15 (50%)	10 (50%)	25 (50%)
Above 180/above 110 mmHg	5 (16.66%)	2 (10%)	7 (14%)

Table 2: Showing the Blood Pressure Range

Total no. of initial 50 hypertensive patients attending the free health camp after 15 years 40 (80%), Male-25, Female-15.

Age Group	Male (25)	Female (15)	Total (40)
45 to 55 yrs.	6 (24%)	6 (40%)	12 (30%)
56 to 65 yrs.	10 (40%)	6 (40%)	16 (40%)
66 to 75 yrs.	5 (20%)	2 (13.33%)	7 (17.5%)
76 to 85 yrs.	4 (16%)	1 (6.66%)	5 (12.5%)
Above 86 yrs.	Nil	Nil	Nil

Table 3: Patient's Profile after 15 years

Total nos. of patients died during 15 years follow up 5 (10%) (Male-3, Female 2). Cause of Death out of 30 males, 3 died (10%).

- Acute myocardial infarction in 1 (3.33%).
- Stroke in 1 (3.33%).
- Cerebral Malaria 1 (3.33%).

Out of 20 females, 2 died (10%), both died of stroke.

Total no. of patients dropped out during 15 years follow up 5 (10%) (Male-2, Female-3).

Blood pressure profile of 40 patients attending monthly free health camp is shown in Table IV.

Blood Pressure	Male N-25	Female N-15	Total N-40
120-139/80-89 mmHg	16 (64%)	10 (66.66%)	26 (65%)
140-159/90-99 mmHg	8 (32%)	4 (26.66%)	12 (30%)
160-179/100-109 mmHg	1 (4%)	1 (6.66%)	2 (5%)
Above 180/110 mmHg	Nil	Nil	Nil

Table 4: Blood Pressure profile of 40 Patients attending Monthly free Health Camp

Compliance

40 (80%) of 50 patients are compliant. They attended the camp regularly on every 4th Sunday and taking the medicine.

Responder

64% of male and 66.66% of female could achieve the target blood pressure and 36% of male and 33.33% female were resistant.

DISCUSSION

In the present study, it was found that 50 (20%) of 250 adult patients attended free health camp on 6th June 2001 at village Udarbond in Cachar District of Assam were found to be hypertensive blood pressure above 140 mmHg systolic and above 90 mmHg diastolic. This finding corroborate with the findings of Raghupathy et al.⁽¹⁾ that 25% of rural Indians are hypertensive. The present study also corroborate with the findings of Kearney PM, et al.⁽³⁾ who reported 20.6% of Indian men and 20.9% of Indian women to be hypertensive. Devi P, et al. reported hypertension in 4.5 to 58.8% of rural Indians.⁽²⁾ Considering the target blood pressure systolic below 140

mmHg and diastolic below 90 mmHg 26 (52%) of 50 hypertensives detected on 6th June 2001 and 26 (65%) of 40 patients attending the camp regularly on 4th Sunday of every month till date could achieve the target blood pressure systolic below 140 mmHg and diastolic below 90 mmHg. Although Raghupathy et al.⁽¹⁾ reported only one-tenth of the rural Indian hypertensives have their blood pressure under control. The findings of the present study suggest that regular blood pressure check up and its treatment could help maintain the blood pressure under control.

Hypertension is a major risk factor for CVDs including stroke and myocardial infarction and its burden is increasing in developing countries as they undergo demographic transition.^(11,12,13) However, in the present study follow up of 50 (30 males and 20 females) hypertensive for 15 years from 6th June 2001 on every 4th Sunday and check up of their blood pressure and to provide appropriate treatment and advice could reduce the incidence of stroke and myocardial infarction. One (3.33%) of 30 male hypertensives died of myocardial infarction and 1 (3.33%) of 30 males died of stroke; 2 (10%) of 20 females died of stroke. It suggests that regular check up of blood pressure and appropriate treatment and advice could reduce the incidence of CVDs death in hypertensives.

SUMMARY AND CONCLUSION

From the present study, it is concluded that the incidence of hypertension in the village Udarbond of Cachar District of Assam is same as other part of rural India. Regular monthly check up of blood pressure and appropriate treatment and advice help to keep the blood pressure under control and lower the incidence of CVDs death in hypertensives.

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