



Case Report

Assessment of Cardiovascular Diseases & Drug Therapy in Northern and Southern Parts of Bangladesh

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Abstract: Cardiovascular diseases (CVDs) are a group of disorders of the heart and blood vessels. Bangladesh is currently facing the silent epidemic of CVD. Medications are a cornerstone of the prevention and management of CVD. Here we studied to assess the currently occurring CVD and their drug therapy in the northern and southern parts of Bangladesh through survey. In the prospective study, we assessed the condition of patients and frequently used drugs therapy with standard questionnaires by interviewing individuals (35 to 60 years old) with a history of coronary heart disease, admitted to some renowned governmental and non-governmental hospital in the northern and southern parts of Bangladesh. From the interview of 263 patients (177 male and 86 female) associated with diabetes were 63 and not associated with diabetes were 200, having asthma 92, smoking habit 97, high sodium intake tendency 93. The most frequently reported diseases were myocardial infarction (MI), unstable angina (UA), hypertension (HTN), and stroke. Sometimes left ventricular failure (LVF) and ischemic heart disease (IHD) was also reported. The most prescribed drugs were diuretics and β -blockers. This survey provides unique contemporary data on characteristics and management of patients with CVD in northern and southern parts of Bangladesh.

Keywords: Cardiovascular Disease, Survey, Northern and Southern Part of Bangladesh

1. Introduction

Over 100 millions of people are affected by CVD worldwide [1]. Millions of people died from CVD in every year. More than half of the deaths occurred in developing countries [2]. About quarter of the deaths occur in south Asia [3]. Among the countries of south Asia, Bangladesh is more vulnerable than the others. People from Bangladesh have a high coronary risk. Additionally, precise targets for preventive interventions are largely unrecognized for this population. Again access to tertiary health care is severely restricted because of low availability and high cost [4]. Underlying social, environmental and economic changes have led to increasing level of major chronic disease determinates such as

tobacco smoking which doubles the risk of CVD, inadequate physical activity, unhealthy diets, excess body weights, sub-optimal levels of blood pressure, high cholesterol and plasma glucose etc., [5, 6]. Moreover, extra sodium intake tendency is also observed in this region. In this survey, we studied on drug treatment against the recent trends of CVS disorder and their life style and food habit on 263 patients of northern and southern parts of Bangladesh including Rajshahi, Dinajpur, Natore, Bogra, Chapainawabganj, Faridpur, Jessore and Feni districts by interviewing consented patients with standard questionnaires.

2. Methods

2.1. Participating Clusters

We selected northern and southern parts of Bangladesh for collecting data regarding CVD and their therapy. Data were collected from some randomly selected districts including Rajshahi, Dinajpur, Natore, Bogra and Chapainawabganj from northern region and from the districts of Faridpur, Jessore and Feni in southern region.

2.2. Patients

The screened population consisted of patients who were hospitalized in medical or surgical cardiology department. Patient's written informed consent was taken before participating interviews. We consulted with the patients and their relatives taken care of them.

On the availability of high quality data we worked on various governmental and non-governmental hospitals in various districts of northern and southern region of the country as shown in table 1.

Table 1. Participants (patients) from various districts in northern and southern region of Bangladesh.

Region/District		Participants	Male		Female	
		Number	Number	%	Number	%
Northern	Rajshahi	48	34	70.83	14	29.16
	Chapainawabganj	27	10	37.03	17	62.96
	Natore	30	27	90.00	03	10.00
	Bogra	16	16	100.00	00	00.00
	Dinajpur	40	27	67.50	13	32.50
Southern	Jessore	35	30	85.75	05	14.28
	Faridpur	20	11	55.00	09	45.00
	Feni	47	32	68.08	15	31.91

2.3. Duration of the Survey

The survey was designed to include all consecutive consenting patients in the duration of one year.

2.4. Data Collection

For data collection, we prepared a simple data collection form with some standard questionnaires regarding treatment of CVD and associated complications. Patients' name, age, sex, type, diseases first diagnosed by physician, prescribed medicines, associated complications such as diabetes, asthma, disease period, disease status, genetic history, risk factors, food habit, etc. were included in the form.

2.5. Statistical Analysis

In our study, we mainly observed the most occurring diseases such as MI, UA, Stroke and HTN and their drug therapies and plotted the total percentage of these diseases comparing between the northern and southern part of Bangladesh.

3. Results and Discussion

3.1. Comparison of CVD Between Northern and Southern Region of Bangladesh

The percentage of CVD between northern and southern region of Bangladesh were compared as shown in Fig. 1A. Among various CVD, the percentage of MI was highest (approximately 40%) in both northern and southern parts. However, there were no significant variations of CVD in different regions.

3.2. Comparison of Cardiovascular (CVS) Drugs Used Between Northern and Southern Part of Bangladesh

The percentage of the use of CVS drugs including diuretics, beta-blockers, antiplatelet, anti-anginal and antihypertensive drugs are plotted in Fig. 1B. The tendency of the use of CVS drugs in northern part was higher in all cases as compared to the southern part.

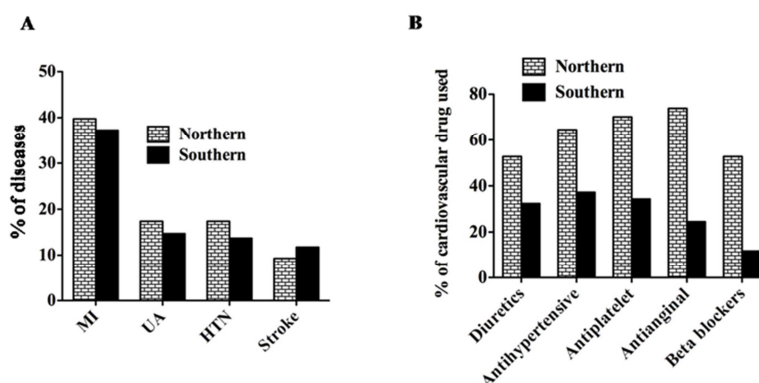


Fig. 1. Comparison on percentage (%) of CVDs between northern and southern parts of Bangladesh. Myocardial infarction (MI) was considerably higher in both northern and southern parts of Bangladesh as compared to other CVDs.

3.3. Comparison of CVD Occurring Each District of the Northern and Southern Part of Bangladesh

We compared the prevalence of CVD among different districts in northern part of Bangladesh. As shown in Fig. 2A, we found that the prevalence of MI and UA was higher in Rajshahi and Bogra districts as compared to others. Whereas HTN was higher in Chapainawabganj and stroke in Natore as

compared to others.

Similarly, we compared the prevalence of CVD among different districts in southern part of Bangladesh (Fig. 2B). We found that the prevalence of MI was higher in Faridpur district as compared to others. Whereas HTN was higher in both Faridpur and Jessore as compared to Feni. However, the patients of Feni district has higher tendency of stroke.

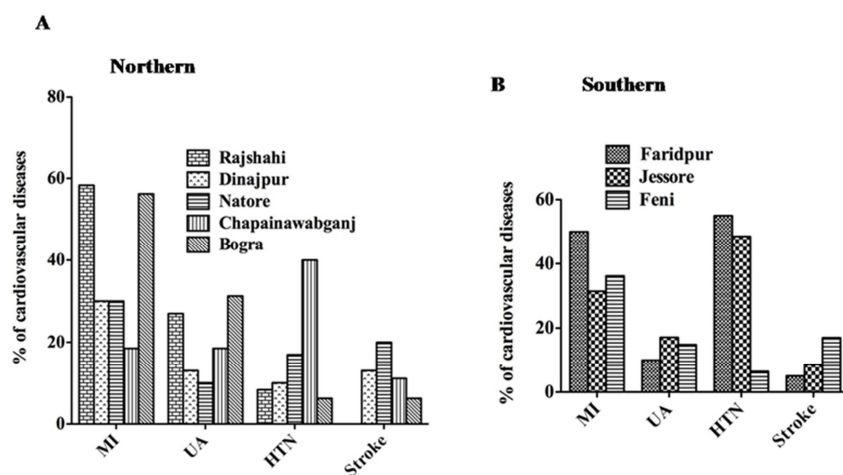


Fig. 2. Percentage (%) of CVD occur each district in northern and southern part of Bangladesh.

3.4. Comparison of CVS Drugs used Each District in Northern and Southern Part of Bangladesh

Here, we assessed the use of CVS drugs among different districts in northern and southern part of Bangladesh. As shown in Fig. 3A, the use of antiplatelet drug was higher in

Bogra but lowest of antihypertensive and beta-blocker drugs. In the southern part of Bangladesh, the use of CVS drugs among the patients of Faridpur and Jessore districts were higher than Feni (Fig. 3B).

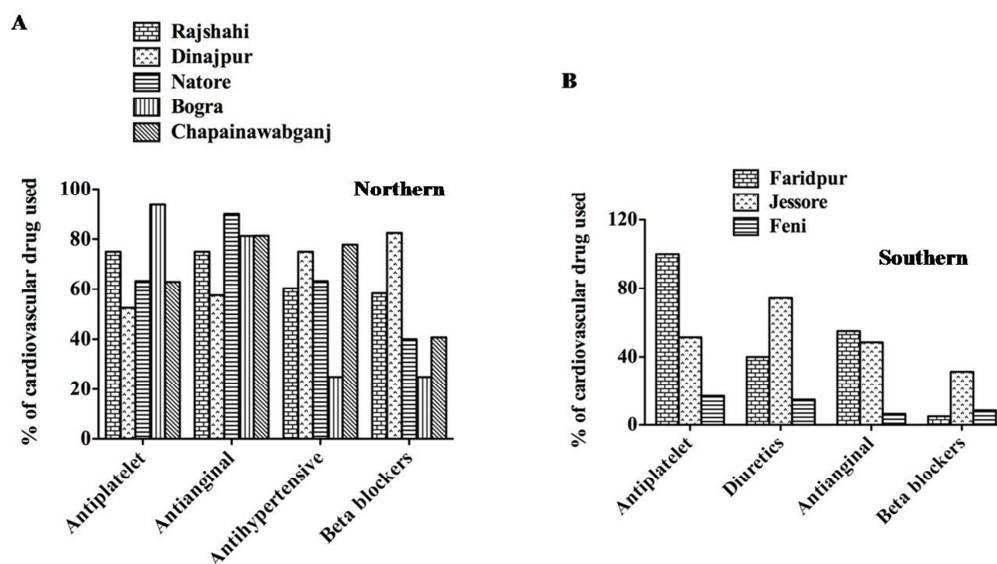


Fig. 3. Comparison on the percentage (%) of CVS drugs used each district in northern and southern parts of Bangladesh.

Cardiovascular diseases (CVDs) are the leading cause of death globally [7]. There are several risk factors for CVDs, such as: age, gender, tobacco use, physical inactivity, excessive alcohol consumption, unhealthy diet, obesity, family history of CVD, raised blood pressure (hypertension),

raised blood sugar (diabetes mellitus), raised blood cholesterol (hyperlipidemia), psychosocial factors, poverty and low educational status, and air pollution [7-11]. The data from this survey allow a contemporary insight into the different aspects of the disease. The survey reports have demonstrated the

prevalence of various CVDs in the representative districts of northern and southern part of Bangladesh. There was no noteworthy difference of the CVDs between northern and southern part of Bangladesh. Here, we found the high rates of MI than other CVDs both in northern and southern part of Bangladesh. It may be due to the difference of food habit, life style, and socioeconomic status of the inhabitants. High dietary intakes of saturated fat, trans-fats and salt and low intake of fruits, vegetables and fish are linked to cardiovascular risk. The World Health Organization attributes approximately 1.7 million deaths worldwide to low fruit and vegetable consumption [7]. The amount of dietary salt consumed is also an important determinant of blood pressure levels and overall cardiovascular risk [7]. There is evidence that higher consumption of sugar is associated with higher blood pressure and unfavorable blood lipids [12]. Therefore, it may not be surprising that the difference of CVDs occurrence between northern and southern districts is due to the differences of those factors. From the survey it is also reported that the use of CVS drugs was higher in the districts of the northern part of Bangladesh as compared to the southern part.

4. Conclusions

CVD effects on worldhealth and the economics of healthcare are devastating. Nevertheless, a vast array of drugs, improved surgical procedures, early diagnosis and prevention, and lifestyle and diet changes are helping to control it to a considerable extent. This prospective survey thus assists to understand the overall conditions of CVDs and their current treatment strategy among northern and southern part of Bangladesh that could be helpful for better management and cure of CVDs.

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