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# MARKET RESEARCH ON POPULAR ANTIHYPERTENSIVE DRUGS

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**Abstract:** Market research is an organized effort to gather information about target markets or customers. The purpose of market research on antihypertensive drugs is to identify the most popular antihypertensive drugs. For this purpose, Different hospitals were visited and 100 prescriptions for antihypertensive patients were collected. The result depicts that Betaloc (Generic name: Metoprolol tartrate), Diretic DS (Generic name: Frusemide and Spironolactone), Carvista (Generic name: Carvedilol), Nidocard (Generic name: nitroglycerin), Metacard MR (Generic name: Trimetazidine Hydrochloride), Ramace (Generic name: Ramipril) and Coversyl (Generic name: Perindopril erbumine) are used as common antihypertensive drugs in Bangladesh.

**Keywords:** Market research, antihypertensive drug, prescriptions.

## Introduction

Market research is a systematic, objective collection and analysis of data about target market, competition, and/or environment and the goal is to increase understanding of the situation<sup>1</sup>. The power of information is valuable when it comes to market research. The information can guide most important strategic business decisions and usually, if done properly, the findings and conclusions we reach have a value that exceeds the cost of the research itself. The current research on antihypertensive drugs in Bangladesh is not available. That is why the research was conducted to find out the most popular antihypertensive drugs.

## Hypertension

Hypertension (HTN) or high blood pressure, sometimes called arterial hypertension, is a chronic medical condition in which the blood pressure in the arteries is elevated. Blood pressure is summarized by two measurements, systolic and diastolic, which depend on whether the heart muscle is contracting (systole) or relaxed between beats (diastole). This equals the maximum and minimum pressure, respectively. There are different definitions of the normal range of blood pressure. Normal blood pressure for adults at rest is within the range of 100–140 mm Hg systolic (top reading) and 60–90 mmHg diastolic (bottom reading). High blood pressure is said to be present if it is often at or above 140/90 mmHg.

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Hypertension is classified as either primary (essential) hypertension or secondary hypertension; about 90–95% of cases are categorized as "primary hypertension" which means high blood pressure with no obvious underlying medical cause<sup>2</sup>. The remaining 5–10% of cases categorized as secondary hypertension is caused by other conditions that affect the kidneys, arteries, heart or endocrine system. Hypertension puts strain on the heart, possibly leading to hypertensive heart disease and coronary artery disease<sup>3</sup>. Hypertension is also a major risk factor for stroke, aneurysms of the arteries (e.g. aortic aneurysm), peripheral arterial disease and chronic kidney disease.

**Antihypertensive agents**

Anti-Hypertensive Drugs are medicines that are used to help lower blood pressure or reduce hypertension<sup>4</sup>. The overall class of antihypertensive agents lowers blood pressure, although the mechanisms of action vary greatly<sup>5</sup>. Among them, the thiazide diuretics, the ACE inhibitors, the calcium channel blockers, the beta blockers, and the angiotensin II receptor antagonists or ARBs are the most important and most widely used. Patient age, associated clinical conditions and end-organ damage also play a part in determining dosage and type of medication administered.

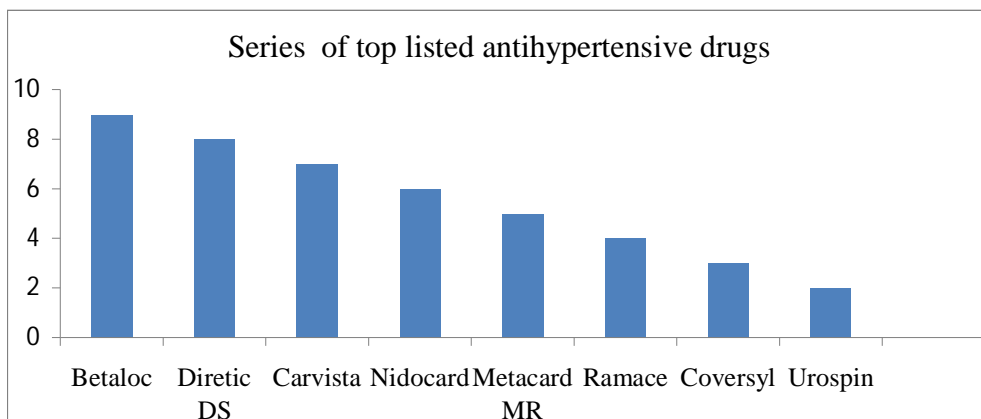
**Materials and methods**

Outpatient department of different hospitals of Dhaka city were visited to collect prescriptions. One hundred prescriptions were randomly collected. The purpose is to identify the most popular antihypertensive drug. A pretested questionnaire was designed to collect information on antihypertensive drugs prescribed by the doctors of hospitals. The collected data were analyzed on the basis of trade names.

**Results**

Most popular antihypertensive drugs are shown in Figure 1 which indicates that Betaloc, Diretic DS and Carvista, Nidocard etc. are in high choice.

Table 1 shows example of some prescriptions prescribed by doctors who treated hypertension in different hospitals of Dhaka city while Table 2 shows the top listed drugs and their classes, brand names, contents and manufacturers.



**Figure 1: Most prescribed antihypertensive drugs**

**Table 1: Observation of some prescriptions from different hospitals**

No of Prescriptions	Patients	Age years	Diagnosis	Brand Name	Drug classes
1	Male	45	Essential Hypertension	Carvista, Protace	Beta-adrenoceptor blocker, ACE inhibitor.
2	Male	50	Essential Hypertension	Diretic DS	Potassium-sparing diuretics.
3	Female	55	Essential Hypertension	Dilatrend ,Diretic DS	Beta-adrenoceptor blocker, Potassium-sparing diuretics.
4	Female	80	Essential Hypertension	Diretic DS, Carvista	Potassium-sparing diuretics, Beta-adrenoceptor blocker.
5	Female	44	Secondary Hypertension	Betaloc , Ramace	Beta-adrenoceptor blocker, ACE inhibitors.
6	Male	65	Essential Hypertension	Diretic DS, Carvista	Potassium-sparing diuretics, Beta-adrenoceptor blocker.
7	Male	48	Secondary Hypertension	Betaloc	Beta-adrenoceptor blocker.
8	Male	55	Essential Hypertension	Betaloc,	Beta-adrenoceptor blocker.
9	Male	51	Essential Hypertension	Carvista,Coversyl	Beta-adrenoceptor blocker, ACE inhibitor.
10	Male	70	Essential Hypertension	Nidocard, Metacard MR	Vasodilators, Anti-ischaeamic drugs
11	Male	45	Essential Hypertension	Nidocard,DireticD S,Carvista	Beta-adrenoceptor blocker, Potassium-sparing diuretics, ACE inhibitor.
12	Male	52	Essential Hypertension	Betaloc	Beta-adrenoceptor blocker.
13	Male	60	Essential Hypertension	Diretic DS, Carvista	Potassium-sparing diuretics, Beta-adrenoceptor blocker.
14	Female	55	Essential Hypertension	Metacard MR	Vasodilators, Anti-ischaeamic drugs.
15	Male	40	Secondary Hypertension	Nidocard	Vasodilators.
16	Male	65	Essential Hypertension	Diretic DS, Protace.	Potassium-sparing diuretics, ACE inhibitor.
17	Male	40	Essential Hypertension	Nitrocard, Betaloc.	Vasodilators, Beta-adrenoceptor blocker.
18	Female	79	Essential Hypertension	Nidocard, Diretic, Ramace.	Vasodilators, Diuretic, ACE- inhibitor.
19	Male	51	Essential Hypertension	Betaloc	Beta-adrenoceptor blocker
20	Male	48	Essential Hypertension	Coversyl	ACE inhibitor.
21	Male	60	Essential Hypertension	Diretic DS, Ramace	Potassium-sparing diuretics, ACE inhibitors.
22	Male	50	Essential Hypertension	Metacard MR, Betaloc	Anti-ischaeamic drugs, Beta-adrenoceptor blocker
23	Male	30	Secondary Hypertension	Betaloc	Beta-adrenoceptor blocker
24	Male	74	Essential Hypertension	Nidocard	Vasodilators.
25	Male	80	Essential Hypertension	Nitrocard, Metacard MR	Vasodilators, Anti-ischaeamic drugs.

**Table 2: Top listed drugs, classes, brand name, contents and manufacturers**

Drug Class	Brand Name	Contains	Manufacturer
Coronary vasodilators	NIDOCARD	Glyceryltrinitrate (nitroglycerin) 2.6mg/tablet	A
Beta-adrenoceptor blocking drugs	BETALOC	Metoprolol tartrate 25mg & 50mg/tablet	A
Anti-ischemic drug	METACARD MR	Trimetazidine Hydrochloride 35mg/tablet	E
Potassium-sparing diuretics with other diuretics	DIRETIC-DS	Frusemide 40mg & Spironolactone 50mg/tablet	A
Beta-adrenoceptor blocking drugs	CARVISTA	Carvedilol 6.25mg, 12.5mg & 25mg/tablet	C
Angiotensin-converting enzyme (ACE) inhibitors	COVERSYL	Perindopril erbumine 4mg & 8mg/tablet	D
Potassium-sparing diuretics with other diuretics	UROSPIN	Frusemide 20mg & spironolactone 50mg/tablet	F
Angiotensin-converting enzyme (ACE) inhibitors	RAMACE	Ramipril BP 1.25mg, 2.5mg & 5mg/capsule	B

### Discussion

Different hospitals of Dhaka city were visited and one hundred prescriptions containing antihypertensive drugs were collected from these hospitals. Among the prescriptions, it was found that Betaloc (Class: Beta-adrenoceptor blocking drugs; Generic name: Metoprolol tartrate; Manufacturer: A) was prescribed 24 times; Diretic DS (Class: Potassium-sparing diuretics with other diuretics; Generic name: Frusemide and Spironolactone; Manufacturer: A) prescribed 22 times; Carvista (Class: Beta-adrenoceptor blocking drugs; Generic name: Carvedilol; Manufacturer: C) prescribed 21 times; Nidocard (Class: Vasodilator; Generic name: nitroglycerin; Manufacturer: A) prescribed 19 times; Metacard MR (Class: Anti-ischemic drug; Generic name: Trimetazidine Hydrochloride; Manufacturer: E) prescribed 12 times. So the most frequently prescribed drugs are Betaloc, Diretic DS, Carvista, and Nidocard. One study in Bangladesh also found beta blocker is the most popular antihypertensive drug in Bangladesh<sup>6-17</sup>.

### Conclusion

The findings were distributed on the basis of trade names. Betaloc, Diretic DS, Carvista, and Nidocard are the most popular antihypertensive drugs in Bangladesh. Manufacturers A and C are the top sellers of antihypertensive drugs in Bangladesh.

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