

STUDY OF CLINICAL CASES OF USING BETA BLOCKERS IN CARDIOVASCULAR DISEASES

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Introduction. Since cardiovascular(CV) diseases represent the world leading cause of death according to the World Health Organization(WHO) there is an increased need for careful study of the drugs that are used for treatment of such diseases. Beta-Blockers (B-B) are appropriate treatment for patients with Essential Hypertension (EH) and those who have concomitant Ischemic Heart Disease(IHD),Chronic Heart Failure(CHF), Obstructive Cardiomyopathy, or certain arrhythmias.

Aims:

- To estimate the frequency of using B-Blockers in cardiological patients.
- To estimate the most widely used B-Blockers.
- To estimate the leading cause of using B-Blockers.
- To analyse if B-Blockers are used according to international guidelines.

Materials and methods. Study was performed at medium sized acute care hospital in Kharkov (Ukraine) for 50 cardiological patients that had been hospitalized in therapeutic department during one month. Method of Data collection: collected from patient medical history.

Results and discussion. It appeared that 54% of cardiological patients, which had admitted to the hospital during this period, were using **B-B** which may be attributed to their broad spectrum of activity in cardiovascular disease.

The most widely used **B-B** in all cases is Bisoprolol accounting for 85.2% of patients,7.4% Nebivolol, 3.7%Metoprolol,3.7% Carvedilol (Table1).

Table 1

Rate use of b-Blockers

Bisoprolol	Nebivolol	Metoprolol	Carvedilol
85.2%	7.4%	3.7%	3.7%

About 37% of patients were using **B-B** due to combination of EH, CHF and IHD.

Since that 22% of patents using **B-B** treatment Hypertension of as mono therapy or with combination which is according to European Society of Hypertension, European Society of Cardiology (ESH/ESC) Guidelines (the current Guidelines reconfirm that Beta-Blockers are suitable for the initiation and maintenance of antihypertensive treatment, either as mono therapy or in combinations). A slightly lower effectiveness of Beta-Blockers in preventing stroke has been attributed to a lesser ability to reduce central systolic blood pressure and pulse pressure.

According to Hypertension guidelines from the Eighth Joint National Committee (JNC 8) **B-B** are not recommended as first line except in the case of comorbidities with Heart failure when B-B should be used in combination with Angiotensin Converting Enzyme Inhibitors (ACEI) or Angiotensin Receptors Blockers(ARB) plus diuretic plus aldosterone antagonist, which represents about 22.2% (B-B+ACE+ diuretic)of case studied (table 2).

Table 2

USE OF b-blockers

B-B as mono therapy	BB+ACE+ diuretic	BB+ACE+ diuretic+ CCB	B-B +ACE	B-B+ diuretic	B-B+CCB*	B-B +ARB
25.9%	22.2%	14.8%	7.4%	7.4%	11.1%	11.1%

*CCB – calcium channel blockers

Approximately 48.2% of the patients using **B-B** had CHF (table 3). 77% were using Bisoprolol, 15.3 % Nebivolol and 7.7% Metoprolol succinate, which is recommended in ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure.

And 66.7% of the patients using **B-B** for treatment of(IHD) and according to (ESC) Guidelines for the management of acute myocardial infarction (highly effective in preventing CV events in patients with a recent myocardial infarction and those with heart failure). Early intravenous **B-B** administration, In patients undergoing fibrinolysis, early intravenous (i.v.) beta-blocker treatment reduces the incidence of acute malignant ventricular arrhythmias and i.v. beta-blockers at the time of presentation followed by oral **B-B** should be considered in haemodynamically stable patients undergoing primary Percutaneous Coronary intervention (PCI). Mid- and long-term **B-B** treatment recommended in patients with reduced systolic Left ventricular(LV) function.

Table 3

Cause of use b-blockers

EH	EH+ CHF	EH+IHD	EH+CHF+ IHD
22.2%	48.2%	66.7%	37%

About 44.5% of patients have used **B-B** with Diabetes mellitus. Beta-blockers are the one of the major class of blood-pressure-lowering drugs that have been implicated in causing diabetes or worsening diabetes control. Beta2-receptors appear to play an important role in the stimulated hepatic glucose production in humans. And according to Hypertension guidelines from the JNC 8 **B-B** are not recommended in patients with Diabetes mellitus (even as third-line).

Conclusions:

- 54% of patients use b-Blockers, among investigated case histories;
- 85% of them use Bisoprolol as monotherapy or in combination;
- 22% use b-blockers for treatment of hypertension;
- 48.2% of patients use b-blockers for treatment of heart failure which is according to international guidelines;
- 66.7% of patients use b-blockers for treatment of IHD which is according to international guidelines;
- 44.5% of patients use b-Blockers with comorbidities of Diabetes mellitus, which is not recommended and should be used with caution and strict medical supervision.

CLINICAL USE OF ANGIOTENSIN-CONVERTING ENZYME INHIBITORS

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Introduction. Angiotensin-converting enzyme inhibitors (ACEIs) have been used for the therapy of cardiovascular diseases, as they are effective, life-saving medicines with more than 20 years of widespread safe use.

ACEIs play an important role in hypertension and heart failure management, both alone and in various combinations with other pharmacological agents from different classes.

Besides being effective and safe in blood pressure control, ACEIs also substantially reduce cardiovascular risk, incidence of fatal and non-fatal heart attacks, strokes, and kidney failure; they also improve quality of life.

Aim.

- To estimate the frequency of different causes for ACEIs use.
- To estimate the most widely used ACEIs.
- To study what drugs are ACEIs most commonly combined with.
- To analyse if ACEIs are used according to the international guidelines.

Materials and methods. We analysed case histories of 50 cardiological patients hospitalized in therapeutic department during one month.

Results and discussion. Table 1 shows that the most common cause of ACEI administration was the combination of heart failure, ischemic heart disease, and essential hypertension. This diagnosis