

Use of β Blockers in patients with Heart Failure and Atrial Fibrillation in tertiary care hospitals of Lahore

ASIM IQBAL¹, SANA ASHFAQ², MUHAMMAD ARSLAN BABAR³

ABSTRACT

Aim: To determine use of β blockers in patients with heart failure(HF) and atrial fibrillation(AF) in tertiary care hospitals of Lahore included Punjab Institute of Cardiology, Mayo Hospital and GulabDevi Hospital, Lahore.

Methods: For this cross sectional study, We get individual patient data from different tertiary care hospitals of Lahore. Sample size of 5750 patients were included in study. Patients data from Jan 2015 to Dec 2016 was taken. Sinus rhythm presence was curtained from electrocardiograph baseline. Analysis was made by intention to treat Patients of heart failure and atrial fibrillation were selected.

Results: 5750 patients were analyze and asses, and sinus rhythm patients was 4625 (73%) and had atrialfibrillation patients 976(15%) at baseline. Patients with 35% to 50% ejection fraction were included. There were mean crude death rates 11% (632 of 5750) of sinus rhythm patients. Therapy of Betablockers had significant reduction in mortality with sinus rhythm heart failure patients and in patients with chronic atrial fibrillation and with age more than 65 years of age. Atrial fibrillation efficacy is deficient in groups of sex, age, heart rate, left ventricular ejection fraction and medical therapy.

Conclusion: Beta blockers is suitable as primary therapy in chronic atrial fibrillation and chronic heart failure. According to findings Beta Blockers should not use vigorously alone in respect to other disease control medications.

Keywords: β blockers, heart failure, atrial fibrillation.

INTRODUCTION

Atrial fibrillation define by rapid heartbeat and often irregular¹. In Atrial fibrillation, upper two chambers of hearts (the atria) beat vigorously and irregularly without any coordination with the heart ventricles². Atrial fibrillation shows firm relation with different cardiovascular diseases, like heart failure, coronary artery disease, heart valvular disease, hypertension and diabetes mellitus³. Immediately, Untreated atrial fibrillation enhances the risk of deaths and many patients are unaware of the serious condition about atrial fibrillation⁴. Beta blockers shows quick recovery in prognosis after heart failure, whereas role of beta blockers quick recovery associated with atrial fibrillation is still unknown⁵. Heart rate control is main point of drug therapy in atrial fibrillation⁶. Beta Blockers are prescribed in reduced ejection fraction and symptomatic heart failure, in atrial fibrillation the patients tolerability of this drugs is still uncertain⁷.

PATEINTS AND METHODS

In this cross-sectional observational study, we get individual patient data from different tertiary care

hospitals of Lahore. Patients data from Jan 2015 to Dec 2016 was taken. This multicenter study was concerned with Punjab data only, which is the largest population based province of Pakistan. Sample size of 5750 patients were included in the study. Patients with congenital heart diseases were excluded from study. We sort out individual patient data from control trials versus heart failure. The presence of sinus rhythm presence was curtained from electrocardiograph baseline. Analysis was made by intention to treat Patients of heart failure and atrial fibrillation were selected. Two nationwide registries were utilize to sort out patients with atrial fibrillation with or without heart failure. Out of 5750 subjects in atrial fibrillation and heart failure, those with use of beta blockers. All standardized differences after comparing were $\leq 8\%$. Primary focus to complete basic treatment method and channelize according to principle. Patients with 35% to 50% ejection fraction were included. In sense of treatment analysis of beta blockers was modeled as variable in study. Although coronary events were decreases to much extent and there was mark reduction in cardiovascular events by immediate treatment of beta blockers in patients. But mortality rate was not significantly decreases.

¹MO, Shalamar Hospital, Lahore

²MO, Services Hospital, Lahore

³MO, Faisalabad Institute of Cardiology, Faisalabad

Correspondence to Dr. AsimIqbal Email: drasim201@gmail.com
Cell: 03006504201

RESULTS

Five thousand, seven hundred and fifty patients were analyzed and assessed, and sinus rhythm patients were 4625 (73%) and had atrial fibrillation patients 976 (15%) at baseline. There were mean crude death rates 11% (565 of 5750) patients. Therapy of β blockers had significant reduction in mortality with sinus rhythm patients but reverse in atrial fibrillation patients (ratio 0.4, 0.6, 0.7 p value ≤ 0.02) but not to much significant in atrial fibrillation. Mean age was 37 years. Male are 70% and female ratio was 30%. Atrial fibrillation efficacy is deficient in groups of sex, age, heart rate, left ventricular ejection fraction and medical therapy. Low doses of beta blockers with combination of other heart rate lowering agents are quite helpful to reduce clinical heart rate range from 73-85 beats/min. Accurate time of drug stop, due to atrial fibrillation are reasons to be still searched. In Chronic heart failure beta blockers shows excellent results in hospitalized patients. But beta blockers do not show significant results, when used as single drug of choice.

DISCUSSION

In this cross sectional study from tertiary care hospital data 5750 patients were analyzed and assessed, and sinus rhythm patients were 4625 (73%) and had atrial fibrillation patients 976 (15%) at baseline. There were mean crude death rates 11% (565 of 5750) of sinus rhythm patients. We observe that use of beta blocker does not reduce the hospital stay of patients but beta blocker use has significant effects on mortality rate in heart failure⁷.

Basic etiology of cardiac disease is found to be sedentary life style, heavy rich fat diets and lack of cardiopulmonary exercises⁸. In order to improve lifestyle and decrease risk of such life threatening disease, we have to aware our society about the healthy lifestyle and importance of exercises in routine daily life⁹. There is no proper evidence of beta-blocker therapy in patients with Heart Failure and Atrial Fibrillation, with preserved systolic Heart failure, or because of ischemic or non-ischemic disease. Most accurate evidence about beta blocker use are come from observational cohorts and from meta analysis¹⁰.

By sorting, limited study data are available from clinical practice side, satisfactory results link with use of beta blockers in patients of heart failure and atrial fibrillation¹¹. From the ethical point of view, Nowadays, it is much difficult to conduct randomized study only with beta blocker use instead of availability of many drug of choices¹².

In the light of this study, beta blockers shows marked effect of protection on mortality reduction in heart failure patients. In the sensitivity analysis the protective effects shows same results. In relation to results beta blocker shows reduction in mortality effects. Past studies show that hospitalization of heart failure patient in conjunction with diabetes mellitus or COPD may get beneficial effects using beta blockers. Secondly, there is limited data regarding hospitalization to have significant prognosis. In near future, more randomized studies are necessary to explore the effects of beta blockers in hospitalized heart failure patients¹³.

However this cross sectional study reveals different advantages of beta blockers use in chronic heart failure and atrial fibrillation patients. This type of results can only be derived from observational studies and only 5% risk was reported¹⁴. There are many limitations in this study, one is the commonly found in the literature is beta-blockers exposure to patients is in fragments. Alteration in medication is not properly documented on follow ups. Similarly, documentation of investigations and related improvements in patient's condition is not kept for research proposes¹⁵.

These little efforts to keep proper patients data will quite helpful in future researches and in favor of better patient outcome. This may be helpful to establish whether best treatment regime for heart failure and atrial fibrillation patients.

CONCLUSION

There are beneficial effects of beta blocker usage in chronic heart failure. Use of beta blockers decreases the mortality rate. In atrial fibrillation beta blockers should not be used alone, but quite helpful in combination form with other medication. There were more improvements in patients with usage of beta blockers.

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