

# REASONS OF MEDICAL NONCOMPLIANCE IN HEART FAILURE PATIENTS

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## ABSTRACT

**Objective:** To determine various reasons of medical noncompliance in heart failure patients.

**Study Design:** Observational survey.

**Place and Duration of Study:** National Institute of Cardiovascular Diseases, Karachi from January 2010 to August 2010.

**Methodology:** Study was conducted in all medical wards of NICVD. We included patients who were already diagnosed heart failure and were on treatment. Patients were asked for reason of noncompliance. Data was analyzed using spss V-13.

**Results:** Out of 267 patients 73 (27.3%) were compliant while 194 (72.7%) were noncompliant. Various reasons of non compliance were, inadequate prescription 20.2%, financial reasons 15.5%, 15.5% of the patients doesn't feel need of taking medication, miscommunication 15%, side affects 13.5%, nonavailability of medication 11.4%, 7.3% other reasons and 1.1% medication were stopped due to other illness.

**Conclusion:** Medical noncompliance has many reasons. Financial, social, and medical are the main reasons.

## INTRODUCTION

Heart failure is very much common in general population<sup>1</sup>. Because multiple drugs are recommended<sup>2,3</sup> for longer periods of times therefore drug non-compliance is very common among these patients. According to the Encyclopedia of Biopharmaceutical Statistics compliance is defined as: *a)* The act of complying with a wish, request, or demand. *b)* Willingness to follow a prescribed course of treatment (medical)<sup>4</sup>. Recent studies<sup>5,6,7</sup> report that upto 60% of all medication prescribed is taken incorrectly, or not at all. Medical noncompliance in heart failure patients adversely affects quality of life

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and increases mortality. It is one of major causes of recurrent hospitalization<sup>8,9</sup>. This study was conducted to find prevalence and various reasons of noncompliance to medication in our population. So that strategies can be made to increase compliance rate by focusing those main reasons of noncompliance.

## METHODS

**Objective:** The aim of this study was to find the frequency of various reasons of medical non-compliance.

**Study Design:** Our study was an observational survey.  
**Study Duration:** Eight Months.

**Study Setting:** All the medical wards of National Institute of Cardiovascular Diseases, Karachi.

**Study Participants:** In total 267 heart failure patients were included in study. We included all the consecutive patients admitted in all the medical wards of hospital who satisfied inclusion criteria.

**Inclusion Criteria:** Patients were included whose heart failure was already diagnosed on the basis of history, examination and echocardiography. Who were above 18 years of age and have already been prescribed anti heart failure medication.

**Exclusion Criteria:** Patients were excluded who were having heart failure due to valvular heart disease, patient having another serious comorbidity such as severe renal failure, severe COPD, and advanced malignancy. These were excluded because some of heart failure medication may be contraindicated in these patients.

**Statistical Analysis:** Data was entered and analyzed on spss V-13 for windows. Data underwent descriptive analysis in the form of frequencies and percentages. Statistical analysis was carried out by using Fisher's exact test and chi square. Level of significance was <0.05.

**RESULTS**

Total 267 patients were included in the study. 166 (54.4%) were males and 101 (45.6%) were females. The frequency of use of different anti failure medication was 78.6% for aspirin, 60.2% for diuretics, 56.1% for ACEIs, 45.3% for beta blockers, 38.2% for digoxin and 43.0% for spironolactone. (Fig. No.1)

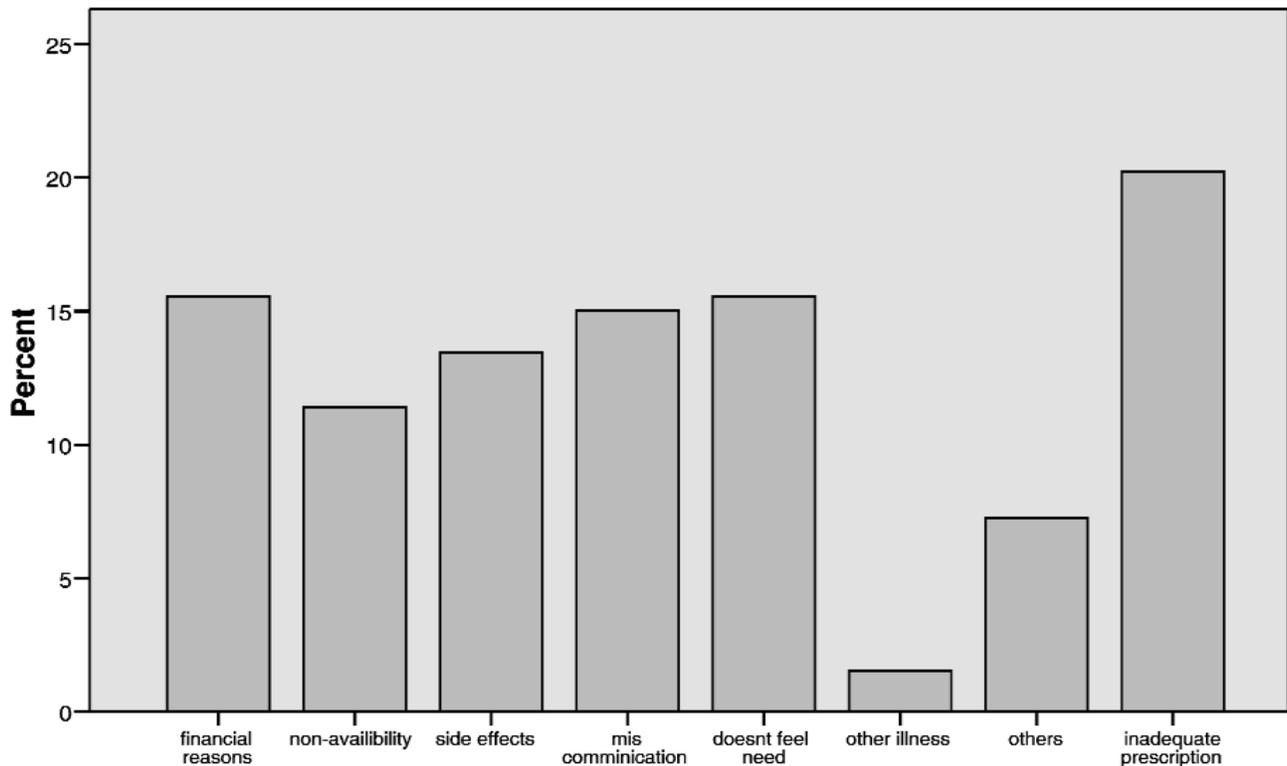
**Fig.-1 : Frequency of use of various Heart failure medications**

Baseline Characteristics		
Aspirin	210	78.6%
Diuretics	161	60.2%
Beta blockers	121	45.3%
ACE-I / ARB	150	56.1%
Digoxin	102	38.2%
Spironolactone	115	43.0%

**Operational Definitions:** Patients were labeled noncompliant if they did not take medication according to prescription. They were also labeled noncompliant if they did not take any of acei, beta blocker and diuretic or not taking digoxin and spironolactone both.

**Data Collection Tool:** Information on personal biodata, and their current medication was obtained by questionnaire. If noncompliance proved patients were asked for reason of noncompliance. The choices of items included in the questionnaire were guided by previous clinical trials and personal experience of local conditions.

About 47.9% took medication according to the prescription of their physicians. Total compliant patient were 73 (27.3%) while 194 (72.7%) were found to be noncompliant. Various reasons of non compliance in order of decreasing frequency were, inadequate prescription 20.2%, financial reasons 15.5%, 15.5% of the patients doesn't feel need of taking medication because their symptoms relieved, miscommunication 15%, side affects 13.5%, 11.4% were not compliant because of nonavailability of medication, 7.3% were noncompliant due to various other reasons and 1.1% were noncompliant because their medication were stopped due to other illness (where stopping medication was not necessary). (Fig. No.2)

**Fig.-2 : Reasons of noncompliance**

## DISCUSSION

Noncompliance has five interacting dimensions: patient-related factors, condition-related factors, therapy-related factors, health care team/system-related factors, and social/economic factors.<sup>10</sup> Poor compliance may take many forms, e.g., not following dietary or exercise recommendations, not taking the prescribed number of pills or taking them at irregular or otherwise no therapeutic intervals, not refilling prescriptions, and not showing up at follow-up clinic visits<sup>11</sup>. Compliance is measured in various ways: medical chart review, patient (in depth) interview, questionnaire and electronic monitoring system. When information on compliance is obtained through chart review, non-compliance rates are probably underreported because it is not always clear how to recognize noncompliance<sup>12</sup>. Reviews have shown that medication compliance ranges between very low compliance 10%<sup>13</sup> and up to numbers above 90%, but the majority seems to be around 70%<sup>14,15,16,17</sup>. Our data showed noncompliance rate of 72.7%. But true compliance may still be very low because these patients were mostly registered in a tertiary care hospital and had many advantages which all patients may not have.

In our study highest rate of compliance i.e. 60% was found with use of diuretics. Often patients are more compliant to drugs that cause symptomatic relief. Only about 50% and 43.4% were compliant to beta blockers and spironolactone respectively. Reason for underuse may be that these drugs affect more prognostically rather than relieving symptoms acutely.

In our study inadequate prescription was the top most reason of medical non-compliance to treatment for heart failure as recommended by AHA/ACC. To some, inadequate prescription may even not be a true non compliance as patients actually follow the prescription, which in itself is inadequate. In majority of the cases prescription of a tertiary care hospital were adequately written as compared to patient taken care by general practitioners.

Another important reason was patients stopping medications because they became symptom-free.

Financial problems were another reason of noncompliance. As other studies have shown patients who have difficulty paying for medications are less likely to take them and can suffer adverse health effects as a result of noncompliance.<sup>18,19</sup> We are poor

nation with low per capita income. Majority of population don't have health insurance coverage. We conducted our study where medication was provided by hospital pharmacy weekly, free of cost to most of patients, subject to availability. Actually free provision of medicines functions as double edged sword. On one hand this provides some medications to otherwise poor patients who would have not bought any of medication, on other hand this make some patients completely dependent on this facility and they do not buy missing medication from outside which they would have done if none of medication was provided by the hospital.

Another important reason was miscommunication. Under this heading we included various reasons which were result of miscommunication. Lack of effective communication between the patient and health care provider often leads to decreased reliance on health care and treatment, resulting in poor disease control and noncompliance<sup>20</sup>. Dissatisfaction with the discharge instructions is an independent correlate of noncompliance<sup>21</sup>. This can be improved with proper counseling to patient regarding his disease process, medication plan, their side affects, and alterations which they can make in their medication temporarily.

As shown by other studies<sup>22,23,24</sup> Side affects of medications were also reason of noncompliance in our study. In majority of cases those were actually normal action of drugs. Among many patients exact side effect was difficult to illicit rather a general feeling of unwell being because of use of medication stopped them taking their medication. In fact many times it is just the exacerbation of underlying heart failure which is the cause of being unwell. This requires treatment modification rather than stopping medication. In minority of our patients medications were stopped due to other illness. Under use of beta-blockers may be because many patients have concurrent Obstructive pulmonary disease. Many a times cardiac asthma is mistakenly diagnosed as COPD and beta blockers are withheld.<sup>25</sup> There are some seemingly contradictions in recommendations of medication, these must be addressed<sup>26</sup>.

Further research to examine other compliance-enhancing strategies among HF patients is needed to better understand compliance behaviors of HF patients. Some of the techniques that physicians can

use to increase compliance include “the use of primacy and importance effects, explicit categorization, simplification, repetition, and the use of specific advise statements<sup>27</sup>.”

It is unlikely that any one intervention will work with all patients, since compliance behavior is very complex and multifaceted. Nonetheless, communicating with, educating and self engagement of HF patients appear to influence their compliance behavior.

## CONCLUSION

Noncompliance to medication is very much common in heart failure patients. There are various reasons of noncompliance. Health care professionals should make strategies to address these reasons to increase compliance to medication in heart failure patients.

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