INTRODUCTION

Approximately 1-2% of population has heart failure (HF), with prevalence rising to 10% or more among persons 70 years of age or older. Among these patients, drug non-compliance is very common. European Society of Cardiology (ESC) and the American Heart Association / American College of Cardiology (AHA/ACC) recommends that multiple medications (ACE-inhibitors, diuretics, beta-blockers, spironolactone, digoxin) are beneficial for HF patients and should, therefore, be prescribed. Adherence, concordance and non-compliance are various terms used interchangeably. However, the preferred terminology remains a matter of debate. Despite the ongoing debate, adherence is the preferred term for the World Health Organization, The American Pharmacists Association, and the U.S. National Institutes of Health Adherence Research Network. According to the Encyclopedia of Biopharmaceutical Statistics compliance is defined as the act of complying with a wish, request, or demand and willingness to follow a prescribed course of treatment.

The aim of this study was to find frequency and factors associated with non-compliance to medication in a group of patients being treated for cardiac failure. Determination of personal and social factors, gender, education, level of self care and recognition of medication that may have non-compliance require exploring so that strategies can be made to increase compliance rate by focusing the main reasons of non-compliance.

METHODOLOGY

This study was conducted at the National Institute of Cardiovascular Diseases, Karachi, Pakistan, from January to August 2010. Patients, aged above 18 years, admitted in medical wards with diagnosis of heart failure, were included. Information regarding basic demographics, education level, self engagement in therapy and status of compliance was obtained by questionnaire. Statistical analysis was carried out by using Fisher’s exact test and chi-square. Level of significance was < 0.05. Data was analyzed using SPSS V-15.

RESULTS: Out of 267 patients, 73 (27.3%) were compliant while 194 (72.7%) were non-compliant. Educated, self caring patient, and those who knew names of their medications were more compliant than the rest.

CONCLUSION: Medical non-compliance is very common in heart failure patients. Illiteracy and no self engagement in therapy are associated with non-compliance.

ABSTRACT

Objective: To determine the frequency and association of various personal and social factors with medical non-compliance in cardiac failure patients.

Study Design: Cross-sectional, observational study.

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

Methodology: Patients admitted in the medical wards of NICVD, who were being treated for cardiac failure, were included. Information regarding basic demographics, education level, self engagement in therapy and status of compliance was obtained by questionnaire. Statistical analysis was carried out by using Fisher’s exact test and chi-square. Level of significance was < 0.05. Data was analyzed using SPSS V-15.

Results: Out of 267 patients, 73 (27.3%) were compliant while 194 (72.7%) were non-compliant. Educated, self caring patient, and those who knew names of their medications were more compliant than the rest.

Conclusion: Medical non-compliance is very common in heart failure patients. Illiteracy and no self engagement in therapy are associated with non-compliance.

Key words: Non-compliance. Cardiac failure. Personal and social factors.
Data was entered and analyzed on Statistical Package for Social Sciences SPSS V-13 for windows. Independent variables were age, sex, education, level of care and recognition of medication. Non-compliance was dependent variable. 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

Two hundred and sixty seven patients were included in the study. Of them, 166 were males (62.2%) and 101 were females (37.8%); 84 were educated (31.5%) and 183 non-educated (68.5%). One hundred and seventeen patients were taking medication by themselves, while 150 patients were given medication by other people (43.8% and 56.2% respectively); 84 patients were able to tell the names of their medication while 183 patients could not (31.5% and 68.5% respectively, Table I). The frequency of the use of different anti-failure medication was 78.3% for aspirin, 61% for diuretics, 56.9% for ACEIs, 44.9% for beta-blockers, 38.2% for digoxin and 43.4% for spironolactone. Total compliant patient were 73 (27.3%) while 194 (72.7%) were found to be non-compliant.

Table I: Baseline characteristics of patients.

<table>
<thead>
<tr>
<th>Baseline characteristics</th>
<th>Gender</th>
<th>Education</th>
<th>Level of care</th>
<th>Recognition of medication</th>
<th>Taking according to prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Educated</td>
<td>Self caring</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Gender</td>
<td>166</td>
<td>84</td>
<td>117</td>
<td>84</td>
<td>60 (47%)</td>
</tr>
<tr>
<td></td>
<td>(62.2%)</td>
<td>(31.5%)</td>
<td>(43.8%)</td>
<td>(31.5%)</td>
<td>(47%)</td>
</tr>
<tr>
<td>Education</td>
<td>Female</td>
<td>Non-educated</td>
<td>Non-self caring</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>101</td>
<td>183</td>
<td>150</td>
<td>183</td>
<td>54 (53%)</td>
</tr>
<tr>
<td></td>
<td>(37.8%)</td>
<td>(68.5%)</td>
<td>(53.2%)</td>
<td>(68.5%)</td>
<td>(53%)</td>
</tr>
</tbody>
</table>

Table II: Association between compliance and study variables.

<table>
<thead>
<tr>
<th>Results</th>
<th>Gender</th>
<th>Education</th>
<th>Level of care</th>
<th>Recognition of medication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Educated</td>
<td>Self caring</td>
<td>Yes</td>
</tr>
<tr>
<td>Complaint Non-compliant p-value</td>
<td>47 (29%)</td>
<td>30 (35.7%)</td>
<td>43 (23.5%)</td>
<td>37 (44%)</td>
</tr>
<tr>
<td></td>
<td>119 (71%)</td>
<td>54 (64.3%)</td>
<td>140 (76.5%)</td>
<td>47 (66%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Non-educated</td>
<td>Non-self caring</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>26 (30.8%)</td>
<td>43 (23.5%)</td>
<td>30 (20%)</td>
<td>36 (19.6%)</td>
</tr>
<tr>
<td></td>
<td>75 (69.2%)</td>
<td>140 (76.5%)</td>
<td>120 (80%)</td>
<td>147 (80.4%)</td>
</tr>
</tbody>
</table>

DISCUSSION

Recent studies reports that upto 60% of all medication prescribed are taken incorrectly, or not at all.10-12 Medical non-compliance in heart failure patients adversely affects quality of life and increase mortality. It is one of major causes of recurrent hospitalization.13,14 This data showed non-compliance rate of 72.7%. it found no effect of gender on compliance. This inconsistency with regard to gender also exist in various other studies; some studies found that women were more compliant than men;15,16 other studies found inverse results.17,18 Like other studies, this study showed a significant association of education status with non-compliance.19 Knowledge of the patients regarding their understanding of disease process, nature of treatment, affects and side effects of treatment and day-to-day alterations are important in the management of heart failure.20,23,25 An attention seeking finding of this study is that persons who take medication by themselves are more compliant. This has also been proven by other studies that patient’s self engagement in therapy increases compliance.23,25,26 As the heart failure patients are generally elderly, we often think they may have forgetfulness, problem in understanding or taking medication themselves so we often engage more with the attendants hoping that this would bring more compliance. This study, however, has shown complete different results. This may be because of the fact that persons who are self-caring take their medication regularly and punctually, while care-givers may not bother much about strict compliance due to their own chores.
Statistically the most significant finding of the study is that patient who do not know their medication by name were highly non-compliant than those who know the names of their medication. This is another reflection of self engagement. Moreover, remembering names of medicines or their actions might have resulted in minor day-to-day self changes in therapy which increases compliance. This makes the active participation of patient in the medication plan very much important.

It is unlikely that any one intervention will work with all patients, since compliance behaviour is very complex and multifaceted. Nonetheless, communicating with, educating and self engagement of cardiac failure patients appear to influence their compliance behaviour. It is crucial for health care providers to understand compliance triggers and related variables. The cost and trauma are too great without it.

CONCLUSION

Medical non-compliance is very common in heart failure patients. Illiteracy and no self-engagement in therapy are associated with non-compliance.

REFERENCES