

Study Of Adherence To Medical Recommendations Of Patients With Chronic Heart Failure On The Background Of Diabetes Mellitus In Primary Health Care Conditions

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Actuality: Diabetes mellitus (DM) is a common disease affecting 5-6% of the population of developed countries. Annually, the number of newly diagnosed cases is 6-10% in relation to the total number of patients, which leads to its doubling every 10-15 years [3] . In economically developed countries, in this regard, it has become not only a medical but also a social problem. Diabetes significantly increases the risk of cardiovascular disease (CVD), which is the main cause of disability and death of patients with diabetes, accelerates the development of atherosclerosis, causing CHD - the main heart disease in patients with diabetes. Regardless of CHD, hypertension DM is the cause of direct damage to the heart muscle, which leads to impaired left ventricular function and the development of heart failure (HF). Chronic heart failure (CHF) is one of the most common and prognostically unfavorable diseases of the cardiovascular system [3]. Concomitant diseases are the most common cause of hospitalization of patients with heart failure, while diabetes is a high proportion.

In modern medicine, there is still a certain conflict of the biomedical approach to treatment, in which healthcare experts primarily pay attention to clinical and metabolic aspects, and biopsychosocial approaches, in which the patient himself as a person with his own psychosocial characteristics takes center stage, in other words, it is about the patient's adherence to the recommendations of doctors.

The problem of adherence remains one of the most pressing topics of modern medicine. The main groups of factors of treatment adherence, including

patient – related factors – patients 'adherence to prescribed treatment; doctor – related factors-doctors' commitment to compliance with clinical recommendations, drug-related factors-features of drug therapy that affect compliance, are identified.

Objective: to assess adherence to medical recommendations in patients with chronic heart failure (CHF) on the background of diabetes mellitus (DM) in primary health care conditions.

Materials and methods

Retrospectively, for the period 2012-2015, we selected 320 outpatient records of patients with CHF in the family polyclinic (FP) No. 19 and the Central Medical Polyclinic (CMP) of Tashkent. Depending on the presence of diabetes, patients were divided into 2 groups: I - the main group - patients with heart failure and diabetes ($n = 220$, 27.5%). The average age of the patients was 59.8 ± 7.9 years. The duration of CHF disease averaged 5 ± 3.5 years, and the duration of diabetes was an average of 8.2 ± 4.72 years. The average FC score was 2.5 ± 0.7 . II - comparison group - patients with heart failure without diabetes ($n = 100$, 12.5%). The average age of which was 59.9 ± 8.2 years. The duration of CHF disease averaged 4.69 ± 3.83 years.

Patients of the main group, depending on age, were divided into 2 groups: 1a - patients under age of 60 and 1b - patients older than 60 years.

Patients under age of 60 was 48.3% ($n = 103$), of which men are 34% ($n = 35$) and women 66% ($n = 68$). The average age of the patients was 52.97 ± 6.62 years. The average age of men was 53.37 ± 4.95 years, and women - 52.76 ± 7.36 years. Patients over 60 years old were 51.6% ($n = 110$), among them men are 38% ($n = 42$), and women 62% ($n = 68$). The average age, which was 66.25 ± 5.34 years. The average age of men was 65.55 ± 5.32 years, and of women 66.69 ± 5.34 years.

An examination was carried out, it was proposed to fill out an adherence form developed at the National Medical Research Center for Preventive Medicine,

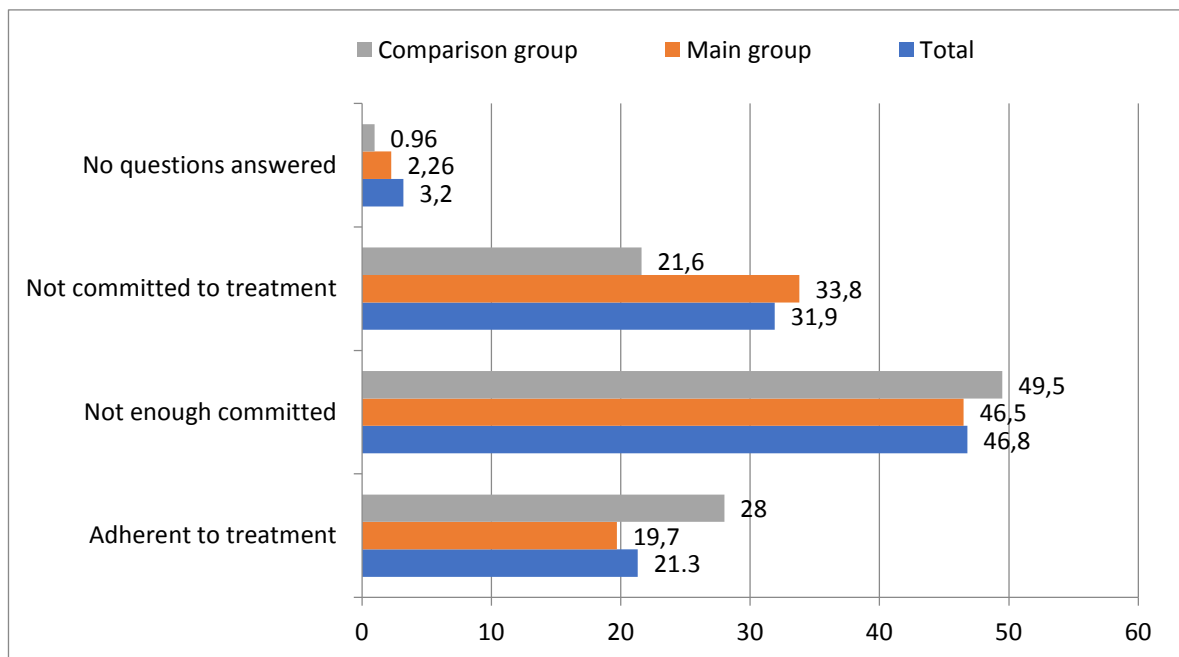
including the Morisky-Green test (MG). The test includes 4 questions (4-item Morisky Medication Adherence Scale - MMAS-4) that determine whether a patient skips medication, feels good or bad, forgets to take medication, and whether he/she is attentive to the recommended medication time.

The data obtained by us was subjected to statistical processing on a personal computer Pentium IV using the Microsoft Office Excel - 2013 software package including the use of the built-in statistical processing functions, as well as using the STATISTICA-6.0 software package.

Results of the study

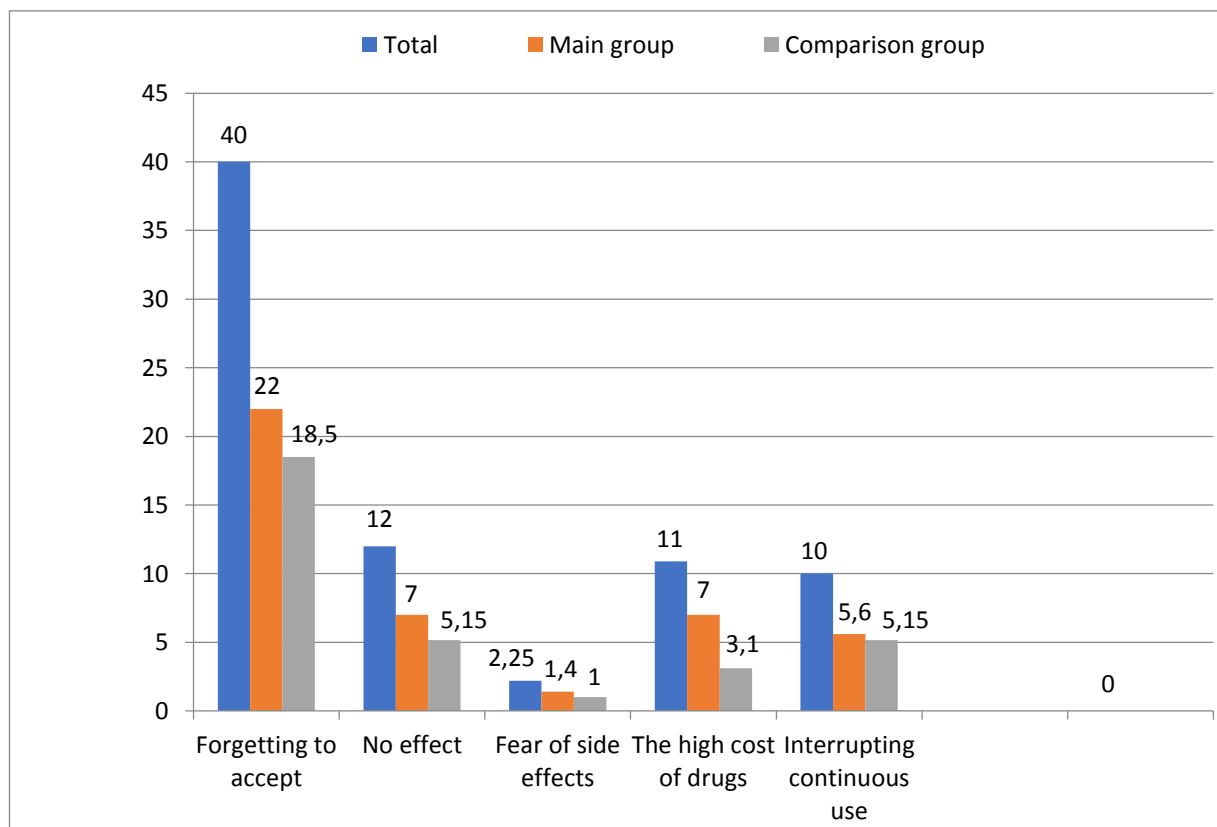
A total of 320 people with CHF were included in the study. All patients were examined, of which 310 agreed to fill out a standard questionnaire, 133 (43%) men and 177 (57%) women, the average age was $59,35 \pm 7,85$ years. According to the Morisky-Green test (4 balls), only 66 (21.3%), out of 310 interviewed people turned out to be adherent to treatment, insufficiently adherent - 145 (46.8%), 99 (31.9%) patients were not adherent (≤ 2 balls) to treatment, 10 patients (3.2%) did not answer test questions, of which 7 (2.26%) were patients of the first group, 3 (0.96%) - patients of the second group. In the first group, only 42 (19.7%) people were adherent to treatment, out of 213 surveyed patients, 99 (46.5%) were insufficiently adherent, 72 (33.8%) patients were not adherent to treatment. In the comparison group, only 28 (28.9%) patients were adherent to treatment, out of 97 surveyed patients, 48 (49.5%) were insufficiently adherent, 21 (21.6%) patients were not adherent to treatment. In the second group only 28 (28,9%) patients were adherent to treatment, out of 97 patients, insufficiently adherent – 48 (49,5%) and 21 (21,6%) patients were not adherent to treatment (Figure 1).

Figure 1 Results of Morisky-Green test (%)



Thus, according to the results of our study, patients of the 2nd group were 46.7% more adherent to treatment compared to patients of the 1st group.

Figure 2. Reasons for skipping or stopping medication (%)



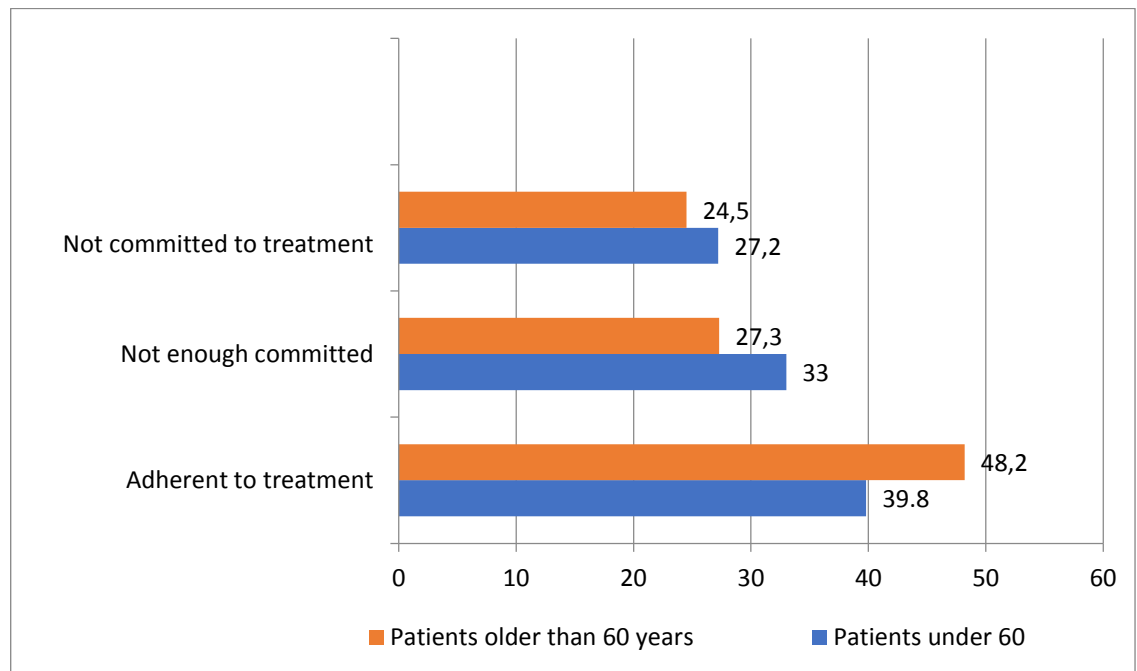
As can be seen, from Figure 2, patients in the general group forgot to take medications - 40% (n = 124), the main group - 22% (n = 47), and the comparison group - 18.5% (n = 18). Patients who did not feel a tangible effect of the medications taken were: in the general group - 12% (n = 37), in the main group - 7% (n = 15) and 5.15% (n = 5). Patients who were afraid of the existing side effects of the medications were: 2.25% (n = 7), 1.4% (n = 3) and 1% (n = 1), respectively.

Due to the high cost, 11% (n = 34) in the general group, 7% (n = 15) in the 1st group and 3.1% (n = 3) in the 2nd group refused medications. It was revealed that patients of the general group independently interrupted the duration of medication in 10% of cases (n=31), in 5.6% of cases (n=12) – patients of the main group and in 5.15% of cases (n=5) - patients of the comparison group.

A comparative analysis showed that in both groups, the main reason for the decrease in adherence to therapy was forgetfulness, which in patients with HF with DM was 19% more compared to the patients with HF without DM.

At the next stage, we studied the adherence to treatment of patients of the main group depending on age: 1a - patients under the age of 60 and 1b - patients older than 60.

**Figure 3 Results of Morisky-Green test depending on age
(%)**

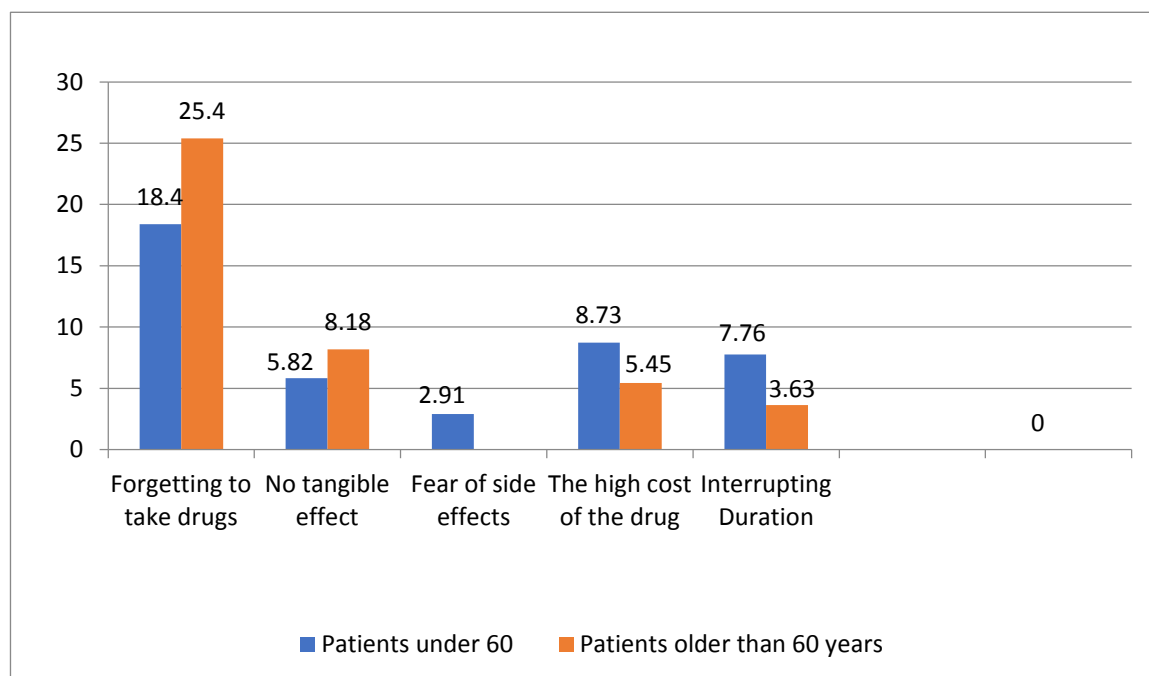


As can be seen, from Figure 3, in group 1a, 39.8% (n = 41) of patients were adherent to treatment, 33% (n = 34) were insufficiently adherent, 27.2% (n = 28) patients were not adherent to treatment. In group 1b, 48.2% (n = 53) of patients were adherent to treatment, 27.3% (n = 30) were insufficiently adherent and 24.5% (n = 27) were not adherent to treatment.

Thus, the studied groups had different directions in relation to the indicator of adherence. Patients over 60 were 21% more adherent to the doctor's recommendations.

At the next stage, we analyzed the reasons for reducing adherence to therapy in patients with HF with DM, depending on age.

Figure 4 Reasons for skipping or stopping medication in patients with HF with DM, depending on age (%)



As can be seen from figure 4, patients under the age of 60 forgot to take medications in 18.4% of cases (n=19), and over 60 in 25.4% (n=28). Patients under the age of 60 – in 5.82% of cases (n=6) and older than 60 – in 8.18% (n=9) did not feel a tangible effect from the medications taken. The dependence on the available side effects of medications was observed only in patients of group 1A-2.91% (n=3). Patients of group 1A-8.73% (n=9), group 1B – 5.45% (n=6) refused due to the high cost of medications. Patients under the age of 60 independently interrupted the duration of medication in 7.76% of cases (n=8), and patients over 60 in 3.63% (n=4), respectively.

A comparative analysis showed that for people of group 1b, forgetfulness was 38% more and medication withdrawal was 13.7% less than group 1a. Patients under the age of 60 in 2.91% of cases were worried about the side effects of medications. Patients of group 1b did not feel a tangible effect from taking medications anymore and 40% less refused the recommended treatment due to the high cost of drugs compared to patients of group 1a.

Conclusions:

1. There was a low adherence of patients with CHF with DM to treatment, compared with patients with CHF without DM.
2. The study of this indicator in patients with CHF with DM depending on age showed that patients older than 60 are more adherent to the recommendations of the doctor.
3. The leading cause of decreased adherence in patients with CHF is forgetfulness, which is more obvious in patients with CHF with DM older than 60.

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