

Original Article: Investigation of medication compliance after surgery and the possibility of readmission in patients after coronary artery graft surgery

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ABSTRACT

Introduction: In adults, readmission within 30 days of heart surgery is a major factor in hospital costs for heart surgery, but current data on risk factors for readmission are scarce. Therefore, we sought to identify performance-adjusted risk factors for coronary artery bypass graft (CABG) re-admissions.

Material and Methods: The records of patients who underwent CABG at our institution between 2012-14 were analyzed for contrast with prospectively recorded case studies, including New York Cardiac Surgery Reporting System (CSRS) events, prescriptions, and testing costs.

Results: Read rate 13%; The CSRS estimated value is 8.7% (observed/predicted ratio = 1.5). The median time from CABG discharge to readmission was 6 days (interquartile range [IQ] 3 to 13 days). The median length of hospital stay was 4 days (IQ 2 to 7 days). The most common causes of readmission were heart disease (n = 40 [25% of readmissions]) and pneumonia (n = 36 [23%]), including pleural effusions. In addition to CSRS status, serum creatinine excretion alone was not associated with increased readings (p=0.5) OR] 5.7, %95 GA 1.7 ila 18.7).

Conclusion: Readmission for coronary artery bypass surgery remains an ongoing medical challenge. Given that readmissions usually occur within the first week after discharge and are usually short-term, attention is paid to follow-up care and risk of readmission (compare, for example, abnormal serum creatinine or abnormal reactivity) and/or multiple causes of readmission. may reduce readmission after CABG (eg, pleural effusion).

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Introduction

Cardiovascular diseases are the leading cause of death worldwide; About 16 million deaths worldwide are due to coronary artery disease, 82% of which are found in developing countries.

The most common cardiovascular disease is coronary artery disease. In fact, coronary artery disease is a disorder that is mainly characterized by narrowing of the coronary artery by atherosclerotic lesions and is considered to be the most economically important disease in the world by 2020 [1-3].

Today, there are various treatments for coronary artery disease, and coronary artery bypass graft surgery is the treatment of choice in many cases. In addition to playing an important role in relieving patients' pain and suffering, this method also increases survival [3]. Because compared to medical treatment, coronary artery bypass grafting is more effective in relieving angina pain and increasing the level of activity tolerance [4].

Studies show that about 84% of heart surgery patients expect at least two or three results from surgery [5-7]. These include prolonging life, improving quality of life, increasing the power of exercise and activity, and relieving pain. Although most patients report postoperative recovery and health [8]; However, many also describe the recovery and rehabilitation period as a set of processes with long-term and short-term effects. Therefore, these problems can be prevented by anticipating the needs and appropriate interventions [5].

On the other hand, the increasing number of heart diseases, increasing hospitalization due to these diseases and the high cost of care and treatment [9], the health system has faced a significant challenge in this century. For this reason, prevention of complications of heart

disease and their successful treatment is essential and requires preventive and therapeutic measures such as physical activity, adherence to a proper diet and continued use of related drugs. This is possible only with the active participation of patients in the treatment and implementation of the recommendations of the treatment team members [6]; Which is referred to as adherence to treatment. In fact, one of the main concerns and clinical problems of health system employees is the problems related to patients' non-compliance with the prescribed treatment regimen [10-12]. This is especially important in chronic diseases such as heart disease that follow treatment for a long time [7].

Chronic diseases, including heart disease, depend to a large extent on adherence to treatment; To the extent that if patients do not follow the treatment recommendations; Even the best treatment regimen becomes worthless. In fact, adherence to treatment means that all patient behaviors are in line with the recommendations provided by health care providers [8].

Regarding the importance of adhering to the treatment regimen in heart patients, Heidari's study can be mentioned. Because, according to this study, non-adherence to diet therapy in heart patients is one of the factors that can lead to readmission of these patients and the presentation of strategies for adherence to diet therapy in heart patients should be considered [9]. Health promotion is the main consequence of adherence to treatment, which in itself can have other consequences in a series that ultimately improve the patient's quality of life. Therefore, considering the importance of adherence to treatment in the health and quality of life of cardiac surgery patients, the present study was conducted to determine the adherence status of coronary artery bypass graft surgery patients admitted to the cardiac surgery ward of Shahid Madani Hospital in Tabriz.

Material and Methods

Study design: The present study was a cross-sectional descriptive study. The statistical population consisted of coronary artery bypass graft surgery patients admitted to the cardiac surgery ward of Shahid Madani Hospital in Tabriz. Sampling was performed by purpose-based method; In this way, 70 patients with an age range of 18-75 years who were interested in participating in the study and had the ability to complete the research tool, were selected as the research sample.

Inclusion and exclusion criteria: Age older than 18 years and coronary artery bypass graft surgery were the inclusion criteria and patients with a history of drug addiction, patients with kidney and liver problems were the exclusion criteria.

Methodology: The research tool included demographic information and Madanloo treatment adherence questionnaire. The Treatment Adherence Questionnaire was designed and psychoanalyzed by Madanloo in the field of chronic patients in 2015. This questionnaire includes 40 questions in the areas of concern in treatment (9 questions), willingness to participate in treatment (7 questions), ability to adapt (7 questions), integration of treatment with life (5 questions), clinging to treatment (4 questions), commitment To treatment (5 questions) and tact in the implementation of treatment (3 questions). Minimum and maximum points in the areas of concern in treatment 0-45, willingness to participate in treatment 0-35, ability to adapt 0-35, integration of treatment with life 0-25, adherence to treatment 0-0, commitment to treatment 0-25 and deliberation in The execution of the treatment is 0-15, which according to the instructions of the

questionnaire designer, the initial scores become the score between 0-100. According to this questionnaire, obtaining a score of 75-100% means adherence to excellent treatment, a score of 74-50% means adherence to good treatment, a score of 26-49% means adherence to secondary treatment and a score of 0-25% means adherence. Poor treatment was considered. Madanloo measured the reliability of the treatment adherence tool using the retest method, which in his study had a correlation coefficient of $r = 0.875$ and in the present study, the correlation coefficient was calculated to be $r = 0.73$ using the retest. In this study, a questionnaire of demographic information and adherence to treatment was completed about five days after coronary artery bypass graft surgery and before discharge by patients admitted to the cardiac surgery ward of Tehran hospitals.

Data analysis: Data analysis was analyzed using descriptive statistics, Pearson correlation coefficient and Chi-square test using SPSS18 software.

Ethical Considerations: It is worth mentioning that the whole process of the present study was carried out after the approval and approval of the ethics committee of Tabriz University of Medical Sciences.

Results

The results of the study on 70 patients who underwent coronary artery bypass graft surgery showed that the mean age of patients was 58.32 \pm 9.4 years ranging from 40 to 75 years, the majority of patients were male (62.9%) and married (77.85%) were. 65.7% of patients had undergraduate education. The duration of coronary artery disease in 38.6% of patients was less than one year. 58.6% of patients had several underlying diseases, the most of which was related to hypertension (14.3%). The mean

score of adherence to treatment in patients is 59.36 ± 08.08 . The highest score of the domains is related to the domain of combining treatment with life of 68.06 ± 19.34 and the lowest score is

related to the domain of planning in the implementation of treatment of 44.52 ± 25.62 (Figure 1).

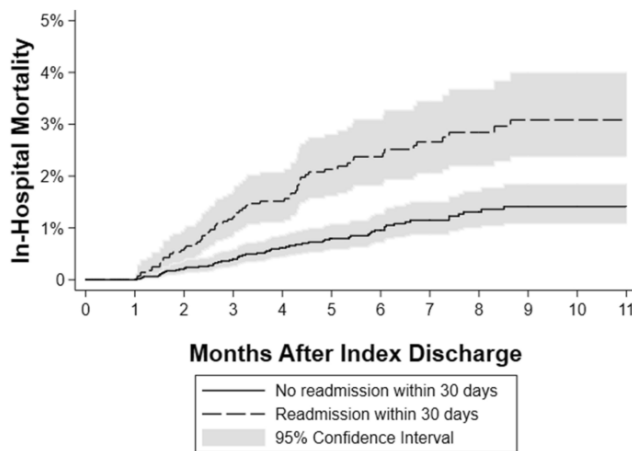


Figure 1: Readmission rate in 11 day after CABG

Correlation between areas of adherence to treatment in patients undergoing coronary artery bypass graft surgery shows a significant relationship between all areas ($p=0.0001$); Except for the scope of treatment diligence in

treatment implementation and the scope of willingness to participate in treatment with commitment to treatment, there is no significant relationship (Figure 2).

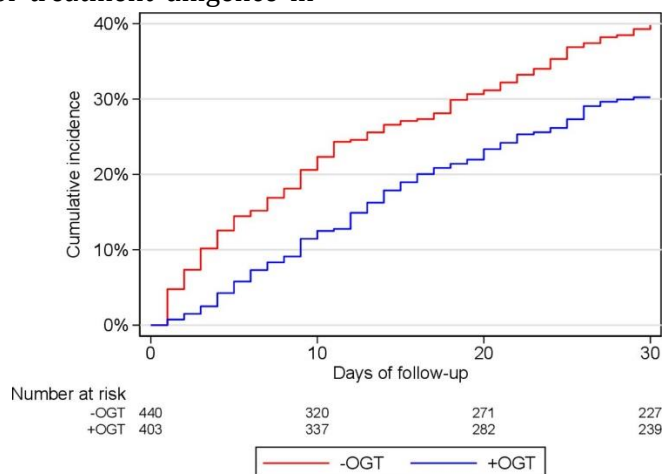


Figure 2: Readmission rate in first month after CABG

This relationship is between the areas of care in treatment with deliberation in the implementation of treatment, between the areas of willingness to participate in treatment by clinging to treatment, the ability to adapt to

deliberation in treatment and combining treatment with life with the areas of clinging to treatment, commitment to treatment and deliberation in execution Treatment was reversed (Figure 3).

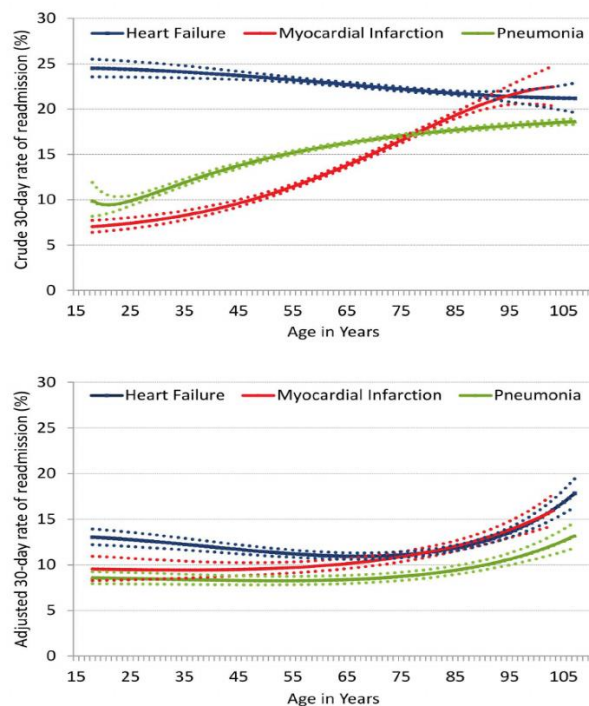


Figure 3: relation between Readmission rate and Age

There was a significant and direct relationship between treatment adherence score and age and number of blocked vessels ($p=0.0001$). Also, using chi-square test, it was found that there is a significant difference between adherence to treatment with gender, level of education,

employment status, family history of coronary artery disease and duration of coronary artery disease ($p=0.0001$); However, there was no significant difference between treatment adherence and marital status (Figure 4).

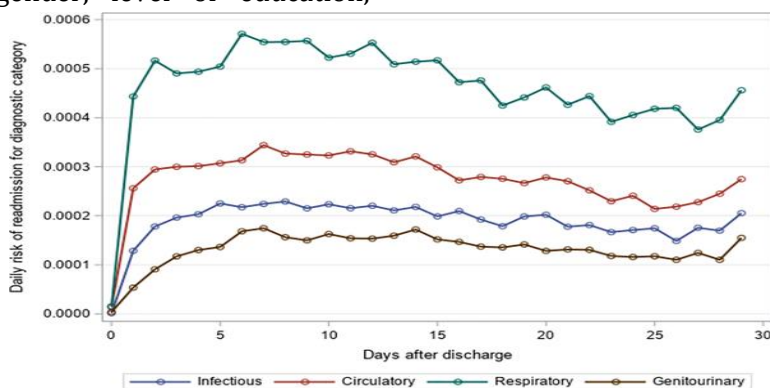


Figure 4: Readmission rate in first year after CABG

Discussion

The highest score is related to the combination of treatment with life and the lowest score is related to the scope of treatment management. Based on these scores, it can be concluded that most patients after coronary artery bypass graft

surgery try to adapt treatment to their living conditions [13-15].

And have treatment recommendations that are more understandable when and how they are and are more in line with financial circumstances, they are more willing to do, and more importantly, they do not neglect treatment

if the family is involved in life [10]; However, they do not have the tact to implement the treatment [16]. Numerous studies also support the finding that strengthening social support in patients undergoing heart bypass surgery is necessary in order for them to adhere to medical recommendations and treatment regimens [11]. On the other hand, a significant and inverse relationship was observed between the domain of willingness to participate in treatment by adhering to treatment, the domain of ability to adapt to treatment with tact in the implementation of treatment, the domain of combining treatment with life with the domains of adherence to therapy and commitment to therapy and tact in performing therapy [12]. Therefore, the more patients are willing to participate in treatment, the less attention patients pay to treatment, and the more patients' ability to adapt to treatment, the less prudence in the implementation of treatment [17-19]. Also, by increasing the integration of patients' treatment with their lives, the tendency to cling to and commit to treatment and tact in the implementation of treatment decreases. The reason for these inverse relationships can be mentioned as patients' lack of knowledge about how to treat themselves [13].

These relationships may become meaningful and direct if patients become aware of how they are being treated and patient-centered methods are used to care for them; Therefore, research is needed in this area [5].

In contrast, no significant relationship was found between the scope of treatment and planning in the implementation of treatment, which shows when the patient is not aware of how to treat [20]; Therefore, there is no attempt to devise it. Therefore, it can be pointed out that the areas of adherence to treatment are related to each other and affect each other and are affected by each other [21-23]. Therefore, it is necessary to pay attention to all aspects of compliance [14].

Meanwhile, nurses, as an active member of the health system and the first line of the patient's encounter with treatment systems, are very effective in implementing ways to improve patient adherence to treatment, as they can be by considering the areas of treatment adherence program and provide training in the field. Adherence to the treatment regimen improves these areas and promotes the health of patients [15].

The results also showed that older patients had more adherence to treatment, which is consistent with similar studies. Based on this study [24-26], a significant relationship was observed between gender and adherence to treatment; In this way, men had better obedience. This finding contradicts previous findings. Because in this study [27-29], women followed the dialysis diet better than men. Whereas previous studies have been performed on dialysis patients [30-32]; Therefore, depending on the type of disease, more contact of dialysis patients with each other during dialysis and sharing experiences, as well as more contact of dialysis patients with nurses during dialysis, which is a time for questioning, can justify this difference [33].

Conclusion

The results showed that patients after coronary artery bypass graft surgery try to coordinate treatment with their living conditions and treatment recommendations that are more understandable when and how and are more in line with financial conditions, more willingly and more importantly. In these patients, social support from family and friends is associated with better obedience to adherence to treatment. Therefore, considering the significant relationship between the areas of adherence to treatment and the essential role of nurses in improving and developing programs Prevention and treatment of patients, especially those with heart disease, it is suggested that nurses in order

to participate in treatment should be able to identify the extent of adherence to treatment and adherence to treatment should become an educational program in the care of these patients.

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