

## Medication adherence and quality of life in coronary artery bypass grafting patients, results of retrospective cohort study

To the Editor,

Studies have shown that medication non-adherence is related to greater morbidity and mortality in chronic disease, including coronary heart disease patients (1). In addition, patients who experience impaired quality of life (QOL) have reported low medication adherence. The purpose of the present study was to evaluate relationship between QOL and patient symptoms and compliance. This is a retrospective cohort study of 196 patients who underwent coronary artery bypass grafting (CABG) 5 years prior. Medication and follow-up visit adherence, post-CABG symptoms and events, and QOL were assessed using study checklist and 36-item health related QOL questionnaire. Five-year survival rate of discharged patients was 87% (SE: 0.032). Kaplan-Meier survival curves did not show difference between men and women (men: 89%, women: 82%;  $p=0.3$ ). Frequency of rehospitalization for cardiac reasons, re-angiogram, and percutaneous coronary intervention in CABG cohort during 5-year period was 18.8%, 7.3%, and 3.1%, respectively. Medication and follow-up visit non-adherence rates were 10.7% and 51.5%, respectively. Logistic regression analysis showed compliance with follow-up visits in patients with chest pain, dyspnea on exertion, and New York Heart Association (NYHA) Functional Classification III/IV were increased 1.7, 1.8, 1.5 times compared to those without symptoms ( $p<0.05$ ). Mean score of physical and mental components were statistically different in patients with and without symptoms ( $p<0.05$ ). Linear regression analysis after adjustment for age and sex indicated lower QOL was related to more symptoms. Physical and mental components of QOL were negatively associated with medication (B:-0.18,  $p:0.04$ ; B:-0.29,  $p:0.02$ , respectively) and follow-up visit observance (B:-0.3,  $p:0.01$ ; B:-0.3,  $p:0.01$ , respectively).

QOL scores in physical and mental components among our study population were equivalent to general elderly population (2). Chest pain, dyspnea, or poor NYHA classification was trigger for seeing doctor, greater medication adherence, and worse QOL. Perhaps taking large number of pills or doses per day may influence QOL, especially mental component. Angina and dyspnea can cause activity limitation and thereby decrease level of QOL. Also, more reported medication and follow-up visit adherence were related to lower QOL score. According to systematic review of chronic obstructive pulmonary disorder patients, increased QOL may trigger medication non-compliance (3). Studies like that of Loopen et al. (4) have shown patient QOL was improved immediately after sur-

gery due to angina relief. Other factors that may make patient QOL worse are adverse effects of medications and cost (5). It is important that perceived health-related personal control and self-efficacy be considered in interpretation of patient adherence studies. Result of present study indicates state of patient adherence and symptoms 5 years after surgery may be different from early months. Association of adherence to various medications like aspirin, statin, beta-blocker, etc. with patient symptoms and cardiac event need to be studied in other research. Also, assessment of patient adherence and QOL at different intervals following CABG and with socio-economic state of population taken into account are proposed.

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**Statement of human rights:** Study design and patient informed consent were approved by the Ethics Committee of Guilan University of Medical Sciences according to Helsinki Declaration.

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