The importance of smoking cessation in follow-up protocols for cardiovascular patients

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Letter to Editor

Dear Editor

Cardiovascular diseases (CVDs) remain a major public health problem not only for their high mortality and morbidity but also for high prevalence, incidence, and economic impact on public health.[1] According to the Global Burden of Disease (GBD), CVDs are the leading cause of global mortality and a major contributor to disability, and their economic burden is rising in almost all countries, especially low to middle-income countries.[2] The Harvard School of Public Health estimated that the global cost of CVD would increase by 20 percent in 2030 compared to 2010.[3]

Approximately, 20% of patients with CVD experience early readmissions, and more patients need re-hospitalization within years after their treatment. Although some of these readmissions are essential for patients, studies show that a significant number of these re-hospitalizations are potentially preventable.[4] There are different predictive factors for CVD readmissions including hypertension (HTN), anemia, atrial fibrillation (AF), chronic kidney disease (CKD), and smoking.[5] Due to the enormous costs of re-hospitalization among patients with CVD and its impact on the quality of public health care, reducing the rate of readmissions and their risk factors has attracted attention of policymakers.[6]

The benefits of smoking cessation are well established, and it has been discovered that the risk of recurrent cardiac events in patients with CVD diminishes after quitting. For example, the risk of recurrent myocardial infarction (MI) and sudden cardiac death increased in patients with coronary heart disease (CHD) who continued to smoke.[7] On the contrary, the mortality rate declines over time among smokers who quit after experiencing MI.[8] These facts imply the significance of smoking cessation in reducing the rate of readmission through patients with CVD.[9]

Until now, different countries have concentrated on smoking cessation plans in their follow-up protocols for patients with CVD, as an important and preventable factor in the reduction of re-hospitalization and improving the efficiency of treatment.[10] For example, the Health Authority of Abu Dhabi established a disease management program that focused on smoking cessation as one of its most important steps to reduce CVD readmissions. Furthermore, according to both the European Guideline and World Health Organization (WHO) CVD-risk management package, all patients should be assessed for tobacco use by a systematic follow-up plan. Each of these follow-up protocols uses various methods of smoking cessation in its package including physician advice, nursing interventions, group counseling, individual counseling, and telephone counseling.[11] It is noticeable that because of technological advancement in communication, these guidelines update their strategies by concentrating on methods like telephone counseling and mobile applications to use the available potential and improve the efficiency of their smoking cessation plans.[12]

According to studies, smoking cessation plans have a significant impact on CVD readmissions in developed countries. In contrast, the quit rate in low to middle-income countries is far lower.[13] This fact shows the lack of success in low to middle-income countries' cessation programs.

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In Iran, as one of the low to middle-income countries, CVD is the leading cause of mortality and disability-adjusted life years (DALYs), and it is responsible for 20%-23% of the burden of diseases. Studies indicate that by controlling CVDs' preventable risk factors, the incidence of CVD can be decreased by 80% in Iran.

The prevalence of smoking - as one of the most important preventable risk factors-among Iranian CVD inpatients is 26.5%, and the risk of CVD attributed to smoking among the Iranian population is 5.5%.[14,15]

There are different smoking cessation programs for patients with CVD in Iran, such as smoking cessation packages in cardiac rehabilitations, in-person sessions, and educational pamphlets.[16] Besides, National Smoking Cessation Guideline of Iran recommends special smoking cessation services and interventions for CVD inpatients, including behavioral interventions, pharmacological interventions, and following patients about four weeks after discharge from hospitals. However, there is a lack of information about the efficacy of these programs, and due to the persistent high prevalence of smoking among Iranian patients with CVD, we can conclude the failure of current smoking cessation programs.[14,17] Accordingly, it is necessary to use experiences in other countries to establish systematic follow-up plans with attention to smoking cessation. Implementation of these protocols requires the cooperation of policymakers in public health organizations, such as health departments, primary healthcare facilities, private healthcare facilities, and universities.[1] We recommend that relevant health organizations establish such plans with concentration on smoking cessation to reduce the rate of CVD readmissions and improve public health status.

Conflict of Interests

Authors have no conflict of interests.

Authors' Contribution

Both authors contributed equally to the study's conception and design. Material preparation, data collection, and analysis were performed by both HS and DM. The first draft of the manuscript was written by HS. Both authors read and approved the final manuscript.

References

1. Gheorghiade M, Vaduganathan M, Fonarow GC, Bonow RO. Rehospitalization for heart failure: Problems and perspectives. J Am Coll Cardiol 2013; 61(4): 391-403.
2. Roth GA, Mensah GA, Johnson CO, Addolorato G, Ammirati E, Baddour LM, et al. Global burden of cardiovascular diseases and risk factors, 1990-2019: Update from the GBD 2019 Study. J Am Coll Cardiol 2020; 76(25): 2982-3021.
3. Bloom DE, Cafiero ET, Jané-Llopis E, Abrahams-Gessel S, Bloom LR, Fathima S, et al. The global economic burden of noncommunicable diseases. Geneva, Switzerland: World Economic Forum; 2011.
4. Frishman WH, Alpert JS. Reducing hospital readmissions for cardiovascular disease: Is it feasible? Am J Med 2013; 126(9): 753-4.
5. Phemphul C, Pansila W, Vibulchai N, Wongvipaporn C. Factors predicting hospital readmission among thais with post myocardial infarction. F1000Research 2021; 10: 415.
6. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program. N Engl J Med 2009; 360(14): 1418-28.
7. Suskin N, Sheth T, Negassa A, Yusuf S. Relationship of current and past smoking to mortality and morbidity in patients with left ventricular dysfunction. J Am Coll Cardiol 2001; 37(6): 1677-82.
8. Wilson K, Gibson N, Willan A, Cook D. Effect of smoking cessation on mortality after myocardial infarction: Meta-analysis of cohort studies. Arch Intern Med 2000; 160(7): 939-44.
9. Pipe AL, Reid RD. Smoking cessation and cardiac rehabilitation: A priority!. Can J Cardiol 2018; 34(10 Suppl 2): S247-S251.
10. Govender RD, Al-Shamsi S, Soteriades ES, Regmi D. Incidence and risk factors for recurrent cardiovascular disease in middle-eastern adults: A retrospective study. BMC Cardiovasc Disord 2019; 19(1): 253.
11. Suissa K, Lariviere J, Eisenberg MJ, Eberg M, Gore GC, Grad R, et al. Efficacy and safety of smoking cessation interventions in patients with cardiovascular disease: A network meta-analysis of randomized controlled trials. Circ Cardiovasc Qual Outcomes 2017; 10(1): e002458.
12. Matkin W, Ordonez-Mena JM, Hartmann-Boyce J. Telephone counselling for smoking cessation. Cochrane Database Syst Rev 2019; 5: CD002850.
13. Bowry AD, Lewey J, Dugani SB, Choudhry NK. The burden of cardiovascular disease in low- and middle-income countries: Epidemiology and management. Can J Cardiol 2015; 31(9): 1151-9.
14. Sarrafzadegan N, Mohammmadifard N. Cardiovascular disease in iran in the last 40 years: Prevalence, Mortality, morbidity, challenges and strategies for cardiovascular prevention. Arch Iran Med 2019; 22(4): 204-10.
15. Taghaddosi M, Vali GR. Behavioral habits and ischemic heart disease in Kashan, 1995. Feyz 2003; 7(2): 43-9. [In Persian].

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16. Mohebbi H, Mazlom SR, Kasraei MR, Hamedi Z, Hosseinikhah H, Dehghan Moghimi H, et al. Comparison of the effects of media-based and face-to-face cardiac rehabilitation training programs on self-efficacy in patients undergoing coronary artery bypass grafting. Evidence Based Care 2018; 8(2): 67-77. [In Persian].

17. Paryad E, Rouhi BL. Smoking cessation: Adherence based on patients' illness perception after coronary artery bypass grafting surgery. Indian Heart J 2018; 70(Suppl 3): S4-S7.