ORIGINAL ARTICLE

Outcomes of smoking cessation after ischemic heart disease

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ABSTRACT:
Background: Coronary heart disease and smoking are closely linked. The present study was conducted to evaluate the outcomes of smoking cessation after ischemic heart disease. **Materials & Methods:** 84 smokers with history of stroke of both genderswere divided into 2 groups based upon smoking status. Group I was quitted smokers and group II was present/continued smokers. The subjects were followed at the interval of 6 months, and 12 months.Risk of outcomes for stroke, MI, and mortality depending on the smoking state was recorded. **Results:** Group I had 30 males and 12 females and group II had 28 males and 14 females. Outcomefor MI at baseline in group I and group II was seen in 31% and 38%, at 6 months was 37% and 43% and at 12 months in 40% and 54% respectively. Stroke at baseline in 19% and 22%, at 6 months in 23% and 27% and at 12 months in 24% and 35%. The mortality rate at baseline was seen in 11% and 17%, at 6 months in 15% and 22% and at 12 months in 18% and 25% in group I and II respectively. The difference was significant ($P< 0.05$).
Conclusion: After ischemic heart disease, quitting smoking greatly lowers the likelihood of getting subsequent conditions like MI and stroke, which is a favourable consequence.
Key words: Smoking, Stroke, Myocardial infarction

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INTRODUCTION

Coronary heart disease and smoking are closely linked. Many people smoke even after receiving a coronary heart disease diagnosis or following a significant event like a myocardial infarction, angioplasty, or coronary bypass surgery.[1,2] The advocacy of smoking cessation is justified by the fact that smoking causes significant illnesses such lung cancer and emphysema, as well as cardiovascular disease and new events in people with coronary heart disease.[3] The relevance of quitting smoking in lowering the risk of coronary death and non-fatal coronary events is emphasized in all recommendations for the prevention of coronary heart disease.

It has been proven that between 12% and 15% of stroke patients seeking medical attention did so because of tobacco use alone.[4] Since most tobacco is absorbed in the form of smoke, smoking is one of the main risk factors for stroke. Furthermore, quitting smoking is an avoidable factor for stroke patients. In addition to stroke, smoking has been linked to lung cancer, chronic obstructive pulmonary disease,

peripheral artery disease, and bladder cancer.[5]Despite the fact that smoking has been linked to a number of serious illnesses, about 21% of adults still smoke.[6]The present study was conducted to evaluatethe outcomes of smokingcessation after ischemic heart disease.

MATERIALS & METHODS

The present study consisted of 84 smokers with history of stroke of both genders. All enrolled patients gave their written consent for participation in the study.

Data such as name, age, gender etc. was recorded. After recording smoking status, a physical examination was conducted. Patients were divided into 2 groups based upon smoking status. Group I was quitted smokers and group II was present/continued smokers. The subjects were followed at the interval of 6 months, and 12 months.Risk of outcomes for stroke, MI, and mortality depending on the smoking state was recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I (Quitted smokers)	Group II (continued smokers)
M:F	30:12	28:14

Table I shows that group I had 30 males and 12 females and group II had 28 males and 14 females.

Table II Comparison of outcome

Outcome	Time interval	Group I	Group II	P value
MI	Baseline	31%	38%	0.05

	6 months	37%	43%	
	12 months	40%	54%	
Stroke	Baseline	19%	22%	0.02
	6 months	23%	27%	
	12 months	24%	35%	
Mortality	Baseline	11%	17%	0.05
	6 months	15%	22%	
	12 months	18%	25%	

Table II, graph I shows that outcome for MI at baseline in group I and group II was seen in 31% and 38%, at 6 monthswas 37% and 43% and at 12 months in 40% and 54% respectively. Strokeat baseline in 19% and 22%, at 6 months in 23% and 27% and at 12 months in 24% and 35%. The mortality rate at baseline was seen in 11% and 17%, at 6 months in 15% and 22% and at 12 monthsin 18% and 25% in group I and II respectively. The difference was significant (P< 0.05).

Graph I Comparison of outcome
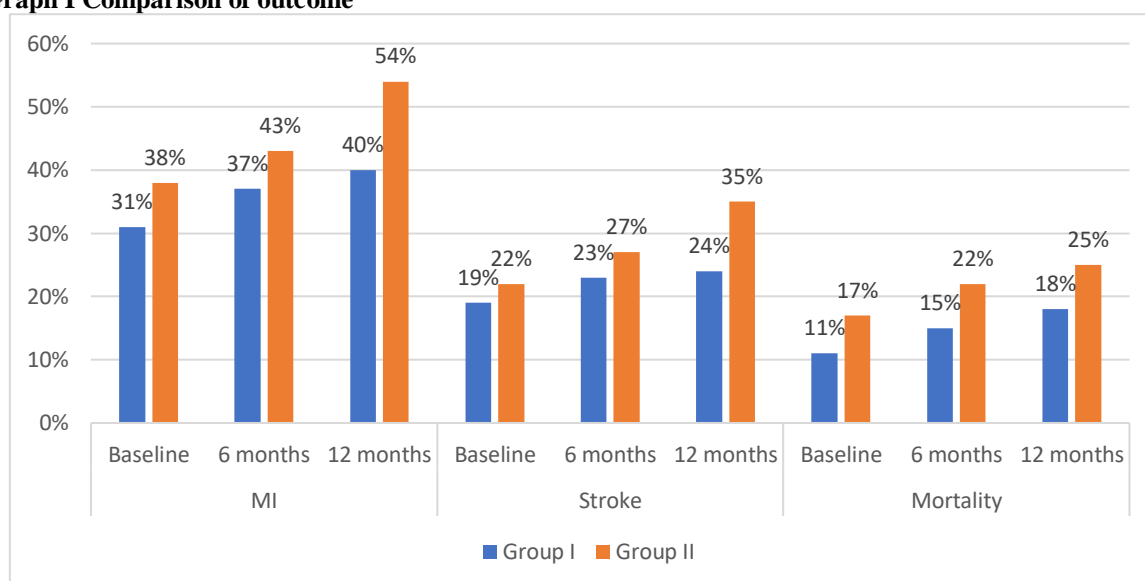
DISCUSSION

Smoking cigarettes exposes one to high levels of nicotine, which raises blood pressure, heart rate, and myocardial oxygen demand. It also exposes one to high levels of carbon monoxide, which lowers blood oxygen carrying capacity due to the production of carboxyhemoglobin.[7] Additionally, smoking cigarettes puts a patient at risk for coronary vasoconstriction. By causing the body to remove nicotine and carbon monoxide earlier, quitting smoking lowers the risk of ischemia through these processes.[8] It has been shown that, in people without a history of heart disease, quitting smoking can eliminate the elevated risk of myocardial infarction as soon as two years after quitting. When smokers with established coronary artery disease stop, their HDL levels rise, perhaps delaying atherogenesis and lowering cardiovascularmorbidity and mortality.[9]All doctors should stress the negative effects of smoking on their health, both short- and long-term, as well as the good news that quitting reduces the risk of myocardial infarction and death significantly, if not completely. This is especially true for patients who already have coronary artery disease.[10]The present study was conducted to evaluate the outcomes of smokingcessation after ischemic heart disease.

We observed that group I had 30 males and 12 females and group II had 28 males and 14 females.After evaluating the effects of smoking cessation on 135 participants who continued to smoke and 105 subjects who stopped, Alvarez LR et al[11] found a (non-significant) decrease in the death rate of the quitters after 14 months. This was after they had suffered cerebrovascular illnesses.

We found that outcomefor MI at baseline in group I and group II was seen in 31% and 38%, at 6 months was 37% and 43% and at 12 months in 40% and 54% respectively. Stroke at baseline in 19% and 22%, at 6 months in 23% and 27% and at 12 months in 24% and 35%. The mortality rate at baseline was seen in 11% and 17%, at 6 months in 15% and 22% and at 12 months in 18% and 25% in group I and II respectively. Armstrong et al[12] enrolled consecutive patients with claudication or critical limb ischemia who underwent peripheral angiography. Smoking status was assessed at the time of angiography and during follow-up clinic visits. Among 739 patients (423 men and 316 women; mean age, 60 ± 12 years), 204 (28%) remained active smokers at the time of

lower extremity angiography. At the time of angiography, the mean number of cigarettes smoked per day was 16 ± 10, and the mean pack-years was 40 ± 25. During the course of the subsequent year, 61 patients (30%) successfully quit smoking and maintained continued abstinence. Baseline medication use between groups did not differ significantly. The mean ankle-brachial index was also similar for quitters vs nonquitters (0.53 ± 24 vs 0.49 ± 0.22; $P = .3$). During follow-up to 5 years, patients who quit smoking had significantly lower all-cause mortality (14% vs 31%; hazard ratio, 0.40; 95% confidence interval, 0.18-0.90) and improved amputation-free survival (81% vs 60%; hazard ratio, 0.43, 95% confidence interval, 0.22-0.86) compared with patients who continued smoking, with most of the difference driven by reduced mortality among patients who quit smoking. The findings remained significant on multivariable analysis.

CONCLUSION
Authors found that after ischemic heart disease, quitting smoking greatly lowers the likelihood of getting subsequent conditions like MI and stroke, which is a favourable consequence.

REFERENCES
1. Song YM, Cho HJ. Risk of stroke and myocardial infarction after reduction or cessation of cigarette smoking: a cohort study in Korean men. Stroke 2008;39:2432–38.
2. Roy A, Rawal I, Jabbour S, Prabhakaran D. 2017. "Tobacco and Cardiovascular Disease: A Summary of Evidence." In Disease Control Priorities (third edition): Volume 5, Cardiovascular, Respiratory, and Related Disorders, edited by Prabhakaran D, Anand S, Gaziano T A, Mbanya J C, Wu Y, Nugent R, editors. Washington, DC: World Bank.
3. John G, Pasche S, Rothen N, Charmoy A, Delhumeau-Cartier C, Genne D. tobacco-stained fingers: a clue for smoking-related disease or harmful alcohol use? A case-control study. BMJ Open 2013;3:003304.
4. Bertoluci MC, Moreira RO, Faludi A, Izar MC, Schaan BD, Valerio CM, Bertolami MC, et al. Brazilian guidelines on prevention of cardiovascular disease in patients with diabetes: a position statement.
5. Ambrose JA, Barua RS. The pathophysiology of cigarette smoking and cardiovascular disease: an update. J Am Coll Cardiol2004;43:1731-7.
6. Kim J, Gall SL, Dewey HM, Macdonell RA, Sturm JW, Thrift AG. Baseline smoking status and the longterm risk of death or nonfatal vascular event in people with stroke: a 10-year survival analysis. Stroke 2012;43:3173-8.
7. Mohiuddin SM, Mooss AN, Hunter CB, Grollmes TL, Cloutier DA, Hilleman DE. Intensive smoking cessation intervention reduces mortality in high-risk smokers with cardiovascular disease. Chest 2007;131:446-52.
8. Jha P, Ramasundarahettige C, Landsman V, et al. 21st-century hazards of smoking and benefits of cessation in the United States. N Engl J Med 2013;368:341-50.
9. Lu JT, Creager MA. The relationship of cigarette smoking to peripheral arterial disease. Reviews in cardiovascular medicine. 2004 Jan 1;5(4):189-93.
10. Price JF, Mowbray PI, Lee AJ, Rumley A, Lowe GD, Fowkes FG. Relationship between smoking and cardiovascular risk factors in the development of peripheral arterial disease and coronary artery disease; Edinburgh Artery Study: Edinburgh Artery Study. European heart journal. 1999 Mar 1;20(5):344-53.
11. Alvarez LR, Balibrea JM, Surinach JM, et al. Smoking cessation and outcome in stable outpatients with coronary, cerebrovascular, or peripheral artery disease. Eur J Prev Cardiol. 2013;20:486-95.
12. Armstrong EJ, Wu J, Singh GD, Dawson DL, Pevec WC, Amsterdam EA, Laird JR. Smoking cessation is associated with decreased mortality and improved amputation-free survival among patients with symptomatic peripheral artery disease. Journal of vascular surgery. 2014 Dec 1;60(6):1565-71.