

## ORIGINAL ARTICLE

# Evaluating the Effects of Smoking as a Risk Factor for Developing Atrial Fibrillation after Coronary Artery Bypass Grafting (CABG) in Mazandaran Heart Center, Sari, Iran, 2008-2012

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### ABSTRACT

*Atrial Fibrillation is a common, usually self-limiting arrhythmia occurs after CABG, but it may lead to longer hospital stay, cerebrovascular accidents, and more hospital costs. A large number of predisposing factor have been said to be involved, the main is elder age. We want to study if smoking also is a risk factor to predispose the patients to Atrial Fibrillation. We analyzed the files of 598 patients who had undergone CABG by the author from Jan. 2008 till Dec. 2012, in Mazandaran Heart Center, Sari, Iran. Allof them except the ones who had history of arrhythmia were included in study. Among 598 patients underwent CABG by the author, There was a history of Cigarette smoking in %38 and opium addict in %33, among the addict patients %63 were cigarette smokers also. Atrial fibrillation in smokers occurred more than nonsmokers statistically significant(Pv=0.030).*

**Keywords:** Coronary Artery Bypass Grafting(CABG),Atrial Fibrillation, Smoking.

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### INTRODUCTION

Atrial fibrillation (AF) after coronary artery bypass grafting (CABG) is a common occurrence and adds to the morbidity and cost associated with the procedure. Postoperative atrial fibrillation is often self-limiting, but it may require anticoagulation therapy and either a rate or rhythm control strategy [1-4]. There is a lot of factors that have been said to be risk factors for post CABG Atrial Fibrillation, the most important one is age. Study done by Feinberg Cardiovascular Research Institute demonstrated that post-CABG AF can be predicted preoperatively from patient age and evidence of intra-atrial conduction delay on ECG. Such information can be used to guide prophylactic therapy [5-7]. Smoking is reported to increase the risk of arrhythmias. However, there are limited data on its effects on arrhythmias following coronary artery bypass graft (CABG)[8-10]. We sought to assess the incidence, pattern and predictors of arrhythmias in smokers and former smokers undergoing CABG[11-13].

### MATERIALS AND METHODS

We analyzed the files of 598 patients who had undergone CABG by the author from Jan. 2008 till Dec. 2012, in Mazandaran Heart Center, Sari, Iran.

Inclusion criteria: All the files of the patients who had not a history of arrhythmia and didn't used anti-arrhythmic drugs before CABG were included in the study.

Exclusion criteria: Presence a history of arrhythmia before CABG or usage of anti-arrhythmic drugs were the exclusion criteria.

In review the scheduled programs were the same for all patients. In deed all the patient had been monitored in ICU OH immediately after transferring from operating room, and all of the had daily ECG till discharge.

### Statistical Analysis

Data were entered into computer using the SPSS version 16. Patient's characteristics weredescribed using means, standard deviations, and percentages wherever appropriate. We used the chi-square test for

comparisons of categorical variables and Student t test for continuous variables P values < 0.05 were considered statistically significant.

**RESULTS AND DISCUSSION**

Among 598 patients underwent CABG by the author, the mean age was 59+/- 3years, %53 were male, %47 were female, There was a history of hypertension in%35, a history of documented hypercholesterolemia in %37, and a history of Diabetes mellitus in %41. There was a history of Cigarette smoking in %38 and opium addict in %33, among the addict patients %63 were cigarette smokers also. 176 patients had one or two vessel disease and 322 patients had three or more vessel disease, the Ejection Fraction was %47.63+/-8.00.(Table1)

Table1: Information about the patient who Admitted for CABG in Mazandaran Heart Center, 2008-2012

|                           |               |
|---------------------------|---------------|
| Age                       | 59+/- 3       |
| Male                      | %53           |
| Female                    | %47           |
| Diabetes Mellitus         | %41           |
| Hypercholesterolemia      | %37           |
| Hypertension              | %35           |
| Cigarette smoker          | %38           |
| Addiction to opioids      | %33           |
| Ejection Fraction         | %47.63+/-8.00 |
| One or two vessel disease | %29           |
| Three vessel disease      | %71           |

The mean age of the smoker patients was lower than the nonsmokers.(Table 2)

Table2: Comparing the information of smokers vs nonsmokers

|                      | Smokers | Nonsmokers | Pvalue |
|----------------------|---------|------------|--------|
| Age                  | 53+/-3  | 64+/-5     | 0.030  |
| Male                 | %87     | %43        | 0.040  |
| Female               | %13     | %57        | 0.015  |
| Diabetes Mellitus    | %40     | %42.5      | 0.080  |
| Hypercholesterolemia | %36.5   | %37.5      | 0.150  |
| Hypertension         | %35     | %35        | 0.170  |
| Addiction to opioids | %76     | %15        | 0.005  |

Age was significantly lower (Pv=0.030) ,male percentage was significantly higher(0.015) and opioid usage was significantly higher(0.005) in smoker group.

Atrial Fibrillation has been occurred in %10 of smokers during hospital stay and it was %5 for nonsmokers (Pv=0.030).therefore Atrial fibrillation in smokers occurred more than nonsmokers statistically significant(Pv=0.030)(Table3)

Table3:Frequency of AF in Smokers underwent CABG vs nonsmokers

| Smokers | Nonsmokers | Pvalue |
|---------|------------|--------|
| %10     | %5         | 0.030  |

**CONCLUSION**

Atrial Fibrillation is a common, usually self -limiting arrhythmia occurs after CABG, but it may lead to longer hospital stay, cerebro-vascular accidents, more hospital costs. A large number of predisposing factor have been said to be involved ,the main is elder age, but we showed that smoking is also an important factor that may contribute in producing Atrial Fibrillation after Coronary Artery Bypass Grafting(CABG) .

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