

**Right Coronary Artery Significant Stenosis as A Predictor of
Early Onset Atrial Fibrillation After Coronary Artery Bypass
Surgery**

Thesis

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Abstract

Background: Atrial fibrillation (AF) represents one of the commonest complications after coronary artery bypass graft (CABG); it occurs in 20% to 40% of patients. right coronary artery (RCA) stenosis represents an important predictor of developing AF.

Aim: The main aim of the study was to evaluate severe right coronary artery stenosis as a predisposing factor of post operative AF, in patients undergoing onpump coronary artery bypass graft (CABG).

Patients and methods: A total of 100 patients with ischemic heart disease who were candidates for on -pump CABG were divided into two group; Group (A) including patients with severe right coronary artery disease and Group (B) had no severe right coronary artery disease. All patients were operated at Kasr Al Ainy Hospitals and Fayoum University Hospitals during the period from January 2022 to June 2022 (6 months duration). Severe right coronary artery stenosis was defined as a narrowing of $>70\%$ of the proximal or mid-segment lumen diameter. Sustained atrial fibrillation was defined as an episode lasting >30 minutes. Daily monitoring of ECG was done until discharge for all patients. Data from the included patients were collected and processed using Microsoft Excel and SPSS software.

Results: The mean age of the included patients was $52.6 (\pm 3)$, and 55 % of them were females. Patients with a history of smoking, diabetes mellitus, or hypertension comprised 54%, 47%, and 49% respectively. The mean Left ventricular ejection fraction was $56 (\pm 5)$. A total of 54

(54%) patients had a history of previous paroxysmal AF episodes. All patients were matched regarding the preoperative general and clinical characteristics.

Atrial fibrillation occurred in 34 (68%) patients with RCA stenosis. On the other hand, it occurred only in 17 (34%) patients without RCA stenosis. The incidence of atrial fibrillation was significantly higher in patients with RCA stenosis compared to those without RCA stenosis; $p=0.001$. There was a positive correlation between RCA and POAF; $r=0.340$, $p=0.001$.

Conclusion: RCA stenosis is the main predictor of developing AF after CABG. Although we could not establish a relationship between the other peri-operative risk factors and the development of AF; they were of great importance and need to be in mind while preparing those patients for cardiac surgeries.

Keywords: atrial fibrillation, POAF, cardiac surgery, CABG.