The Incidence of Postoperative Atrial Fibrillation after Coronary Artery Bypass Grafting in Patients with Local and Diffuse Coronary Artery Disease

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Abstract : De novo atrial fibrillation (AF) after coronary artery bypass grafting (CABG) is a common complication. To date, there are no data on the possible effect of diffuse lesions of coronary arteries on the incidence of postoperative AF complications. Methods. Patients operated on-pump under hypothermic conditions during the calendar year (2020) were studied. Inclusion criteria - isolated CABG and achievement of complete myocardial revascularization. Patients with a history of AF moderate and severe valve dysfunction, hormonal thyroid pathology, initial CHF(Congestive heart failure), as well as patients with developed perioperative complications (IM, acute heart failure, massive blood loss) and deceased were excluded. Thus 227 patients were included; mean age 65±9 years; 69% were men. 89% of patients had a 3-vessel lesion of the coronary artery; the remainder had a 2-vessel lesion. Mean LV size: 3.9±0.3 cm, indexed LV volume: 29.4±5.3 mL/m2. Two groups were considered: D (n=98), patients with diffuse coronary heart disease, and L (n=129), patients with local coronary heart disease. Clinical and demographic characteristics in the groups were comparable. Rhythm assessment: continuous bedside ECG monitoring up to 5 days; ECG CT at 5-7 days after CABG; daily routine ECG registration. Follow-up period - postoperative hospital period. Results. The Median follow-up period was 9 (7;11) days. POFP (Postoperative atrial fibrillation) was detected in 61/227 (27%) patients: 34/98 (35%) in group D versus 27/129 (21%) in group L; p<0.05. Moreover, the values of revascularization index in groups D and L (3.9±0.7 and 3.8±0.5, respectively) were equal, and the mean time Cardiopulmonary bypass (CPB) (107 ± 27 and 80 ± 13 min), as well as the mean ischemic time (67 ± 17 and 55 ± 11 min) were significantly longer in group D (p<0.05). However, a separate analysis of these parameters in patients with and without developed AF did not reveal any significant differences in group D (CPB time 99 ± 21.2 min, ischemic time 63 ± 12.2 min), or in group L (CPB time 88 ± 13.1 min, ischemic time 58.7±13.2 min). Conclusion. With the diffuse nature of coronary lesions, the incidence of AF in the hospital period after isolated CABG definitely increases. To better understand the role of severe coronary atherosclerosis in the development of POAF, it is necessary to distinguish the influence of organic features of atrial and ventricular myocardium (as a consequence of chronic coronary disease) from the features of surgical correction in diffuse coronary lesions.

Keywords : atrial fibrillation, diffuse coronary artery disease, coronary artery bypass grafting, local coronary artery disease **Conference Title :** ICHSE 2021 : International Conference on Heart Surgery and Electrophysiology

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Conference Location : Rome, Italy

Conference Dates : November 11-12, 2021