26198 - OFF-PUMP CABG SURGERY REDUCES BRAIN INJURY IN ATHEROMATOUS THORACIC AORTA

Rita Katznelson MD, Ludwik Fedorko, MD; Robert James Cusimano, MD; Jacek Karski, George Djaiani, MD; Toronto General Hospital, UHN, Toronto, ONTARIO, Canada

INTRODUCTION: The purpose of this study was to determine association between proximal thoracic aortic (ascending aorta and aortic arch) atheroma and ischemic brain injury after coronary artery bypass graft surgery with (ONCAB) or without (OPCAB) cardiopulmonary bypass.

METHODS: Following Research Ethics Board approval we studied a total of 26 patients. Patients who underwent OPCAB surgery (n = 13) and had mild to moderate atheroma of the proximal thoracic aorta (maximum height of atheroma > 2mm) were compared to historical controls (n = 13) who had similar extent and severity of atheromatous disease and had undergone ONCAB surgery. Transesophageal echocardiography and epiaortic scanning was performed to assess proximal thoracic aorta. All patients were evaluated for new ischemic brain lesions utilizing diffusion-weighted magnetic resonance imaging (DW-MRI) 3-7 days after surgery. The NEECHAM confusion scale was used to assess patient consciousness level.

RESULTS: Both groups were comparable with respect to demographic data, and prevalence of preoperative risk factors. Extent and severity of atheroma was similar between the two groups. The maximum height of atheroma was 5.1 ± 2.3 mm in OPCAB and 4.8 ± 1.9 in ONCAB groups respectively, $p=0.68$. Prevalence of new ischemic brain lesions on DW-MRI was 0% in OPCAB group and 61% in ONCAB group, $p=0.002$. Patients in OPCAB group were less confused during the first two postoperative days.

DISCUSSION: Patients with mild to moderate atheroma of the proximal thoracic aorta may have a low risk of experiencing new ischemic brain lesions after OPCAB surgery. Patient stratification based on the aortic atheromatic burden should be addressed in future trials designed to tailor treatment strategies to improve short and long term outcomes of coronary heart disease.