

Postoperative cognitive dysfunctions after cardiac operations

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Abstract

Coronary artery by-pass grafting (CABG) is more frequent among all surgery operations. Despite the advances in cardiac surgery, like “of pump” cardio-surgery methods, the number of patients with neurological complications is still significant. Postoperative cognitive dysfunction (POCD) defined as the difference between pre-operative and post-operative cognitive abilities is an important neuropsychiatric complication of CABG. More severe cognitive decline on the dementia shows patients with preoperative cognitive disturbances and with comorbidity of other serious somatic illnesses. CABG may cause by micro-embolic, hypoxia, oxidative stress which are more frequent reasons of neurons and brain tissue damage. These factors are related to the level of different cognitive domains impairment such as attention, memory, executive functions and dexterity. To prevent CNS damage and eliminate postoperative neuropsychiatric disturbances surgeons introduced some advantageous operating techniques. Noteworthy among them is a state-of-the-art off-pump CABG aorta no-touch operation procedure. In other hand the pharmacological and non-pharmacological treatment methods of subjects with POCD are developed. The aim of this research was to evaluate the short-term effect of “no touch” OPCABG on patients’ attention and executive functions. The results obtained show significant impairment of most cognitive domains in patients who underwent “traditional” OPCABG, compared to the no touch OPCABG procedure. Also the novel system dedicated for monitoring of pre – inter - and post-operative events important for CNS damage and methods of cognitive early rehabilitation will be presented.

Biography

Alina Borkowska is Head and Chair of Clinical Neuropsychology Department in Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Torun. Her research concerns on neurobiology and genetics of cognitive dysfunctions in psychiatric and neurological diseases, somatic illnesses and in patients after cardio-surgery and neurosurgery operations. She is a Head of numerous universities and national grants. She was awarded with national and international scientific awards. She is a member of Polish Psychiatric Association, European Psychiatrist Association and member of scientific board in numerous scientific journals. She is also Advisory Board Member of Polish Brain Committee. She was invited as a speaker on international conferences. She has published more than 400 papers in reputed journals with total IF=112.