PostOperative Cognitive Dysfunction –Measurement and Meaning

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PostOperative Cognitive dysfunction POCD) refers to a measurable decrease in cognition following anaesthesia and surgery. The construct has been extensively studied following cardiac surgery and more recently after non-cardiac surgery. Investigators utilise a neuropsychological battery composed of various tests administered to patients before and at various time intervals after surgery. A decrease in test performance is taken as evidence that the operative process has had a detrimental effect on patient cognition. The tests employed vary widely in type, number and method of analysis.

The question arises as to what the importance of a decrease in cognitive test scores signify, even assuming the testing process, results and analysis are accurate. There is little information on how a decline in these test scores impacts on functional activity. This is surprising since small decreases in cognitive function within the general population known as Mild Cognitive Impairment (MCI) not only require objective evidence of cognitive decline on testing but also self or an informant report of problems with coping with daily life.

Until more accurate information is obtained on the short and long term functional capacity of subjects with POCD, neuropsychological testing will fail to inform of the true impact of POCD after anaesthesia and surgery. More importantly, unless greater efforts are undertaken to align POCD with functional scales used to identify MCI and dementia, POCD will remain an abstract construct with little relevance to the patients' daily lives. As the population ages and becomes susceptible to dementia from degenerative and vascular causes it becomes increasingly important that any contribution of anaesthesia and surgery be identified.