

44520 - DOES THE CLOCK DRAWING TEST DETECT DELIRIUM OR POCD AFTER AORTIC REPAIR?

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INTRODUCTION: Delirium is a transient, fluctuating disturbance of consciousness, attention, cognition, and perception that frequently complicates the course of hospitalized patients(1). Postoperative cognitive dysfunction (POCD) is a disorder of thought processes and often affects an isolated domain of cognition(2). The clock drawing test (CDT) is a validated, easily-administered, screening tool for cognitive dysfunction in patients with dementia. The purpose of this study was to determine if the CDT may be used as screening tool for delirium or POCD following surgery.

METHODS: Following research ethics board approval and written informed consent a cohort of patients 60 years of age and older undergoing open repair of the abdominal aorta was recruited. A battery of 9 neuropsychometric (NP) tests was performed prior to surgery. Delirium was assessed on postoperative days (POD) 2, 4 and 7 using the Confusion Assessment Method (CAM). NP testing was repeated on POD7. NP testing results from a group of non-surgical patients was used to adjust NP scores using reliable change index methodology(3). POCD was diagnosed if a 2 standard deviation decrease in NP testing was detected. The CDT was administered preoperatively and postoperatively on POD 2, 4 and 7. Clocks were evaluated by a single reviewer using two validated scoring methods: the Clock Drawing Interpretation Scale (CDIS)(4) and the CAMDEX(5). CDT scores were compared to the CAM and NP tests results using the Cohen's kappa coefficient. A kappa 0.6 or greater is considered acceptable agreement between tests.

RESULTS: Fifty-nine patients have thus far undergone preoperative evaluation and surgery. Withdrawal of 7 patients (4 deaths, 3 withdrawals) precluded complete in-hospital testing for all patients. CDTs were compared with 159 CAM scores and 49 NP assessments on POD7. Delirium as defined by the CAM was diagnosed in 19 of 53 (35.8%) patients while POCD as defined by the NP test battery was identified in 33 of 52 (63.5%) patients at POD7. The CAMDEX and CDIS demonstrated good agreement (kappa = 0.59) although the CDIS identified 27 abnormal clocks among the 101 defined as normal on the CAMDEX. Abnormal CDT results as defined by the CAMDEX and CDIS did not agree with the diagnoses of delirium (kappa of 0.21 and 0.17 respectively) or of POCD (kappa of 0.09 and 0.3 respectively).

DISCUSSION: The clock drawing test cannot be considered a reliable screening tool for either postoperative delirium or postoperative cognitive dysfunction. This test cannot be recommended as a screening tool to identify those individuals in need of more comprehensive testing.

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