Use of the Clock Drawing Test (CDT) to Identify Early Signs of Delirium in Post-Operative Older Oncology Patients

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ABSTRACT

Through the innovative approach of improving transitional care for geriatric oncology patients undergoing surgical interventions, we have found that using a comparison of patients’ pre-operative and post-operative clock drawings is a sensitive tool in predicting which patients will go on to experience post-operative delirium (POD).

Delirium is a significant problem for post-operative geriatric patients, and it usually triggers a cascade of events that culminate with increased morbidity and mortality. Unfortunately, early signs of delirium are often difficult to identify, partly because of its fluctuating nature. The Confusion Assessment Method (CAM) is a well-documented tool to assist in identifying delirium, but this group with no obvious cognitive impairment and therefore not expected POD could benefit from early detection.

METHODS

Pre-operative Outpatient Assessment

• Pre-operative clock drawing in normal versus abnormal CDT

Pre-operative clock drawing versus post-operative delirium: 2-sided p = 0.031

RESULTS

• Findings suggest there is sufficient evidence to reject the null hypothesis of no effect of pre-operative delirium on post-operative CDT

CLINICAL EXAMPLES

RS: CAM was negative for delirium at time of abnormal CDT. RS became delirious later that evening prompting change in post-operative delirium. Delirium resolved next day.

DISCUSSION

Our study suggests that comparing patient’s CDT before and after surgery may help clinicians identify those at risk of experiencing POD.

• Highest incidence of POD: Normal pre-operative CDT followed by abnormal post-operative CDT.

• This group with no obvious cognitive impairment and therefore not expected POD could benefit from early detection.

• Patients with abnormal pre-operative CDT were found to have a lower incidence of POD than expected.

• This may be due to clinic assessment of possible presurgical cognitive dysfunction and evaluation of preventive measures.

The sample size in this study was small and although results were not statistically significant, it has influenced our practice. By continuing to follow the patient from the pre-operative visit through the early post-operative period we are able to detect subtle changes in the patient’s cognition and identify who are at risk for delirium. When CDT changes are observed, specific interventions are now considered including:

• Early assessment for possible causes for a delirium such as: laboratory abnormalities, infections, constipation, bladder catheters, dehydration, reactions to analgesics or opioids, or other medication side-effects.

• Conducting multidisciplinary interventions to prevent and treat delirium such as frequent attention, early mobilization of the patient, reference to OT and PT for geriatric assessment and treatment, one-to-one observation, family education.

REFERENCES


We will continue to use the CDT across the patient care settings in both the pre- and post-operative setting to help identify patients at risk for delirium. We plan to replicate this study with a larger retrospective chart review looking at results of pre and post-operative CDT and its correlation with post-operative delirium to determine if our findings are statistically significant.