

Summary Sheet

Cognitive Assessment

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Cognition – Definition

Cognition is defined as the mental activities involved in acquiring and processing information that is required for everyday living to enable the individual to solve problems and make plans. Changes in cognition are categorised into three distinct conditions:

1. *Delirium* – An acute and fluctuating confused state of mind
2. *Post-operative cognitive decline* – Impairment of cognitive function including memory, learning, concentration and speed of mental processing
3. *Dementia* – Insidious and progressive disorder characterised by impairment of memory and at least one other cognitive domain¹.

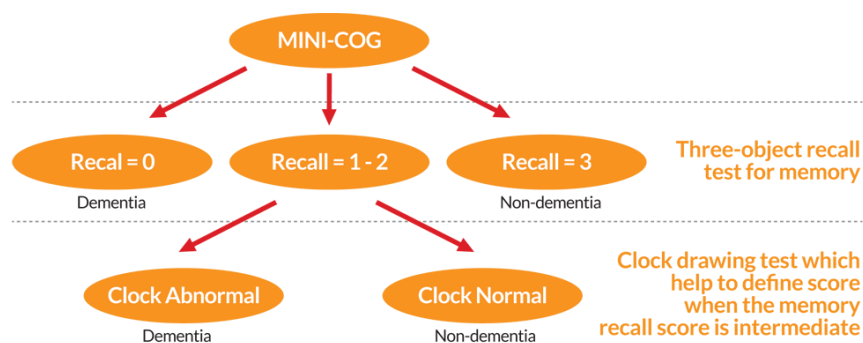
Implications of Impaired Cognition

The prevalence of undiagnosed preoperative cognitive impairment is 50-60% in patients presenting for vascular surgery². Although this is represented in a sub-group of high risk patients, this picture is likely to exist in other older surgical patients³.

Pre-existing cognitive impairment (delirium or mild cognitive impairment) is a strong predictor of post-operative cognitive decline and delirium⁴; an entity that is not routinely screened for at pre-operative assessment⁵. Post-operative cognitive decline is a major concern for elderly surgical patients, with delirium affecting up to 70% of patients aged 60 or older undergoing major surgery⁶. Delirium can have an impact on short and long term outcomes and is strongly associated with increased mortality, persistent cognitive decline, and prolonged intensive care and hospital length of stay^{7,10}, as well as an all-cause mortality⁸.

Assessment of Cognitive Function

Screening for preoperative cognitive impairment is essential in the older population to identify those at risk of cognitive decline in the post-operative period. The Mini-Mental State Examination has been widely used for assessment of cognitive impairment, but is too time consuming for the pre-assessment clinic setting⁹. The single test that has been validated for use in the preoperative setting is the Mini-cog, with a specificity of 93% for dementia. This test was published in 2000 for discriminating demented from non-demented persons in a diverse, geriatric community. The test involves recalling 3 items and a clock drawing test. One point is awarded for each correctly recalled word, and the clock is scored as normal if the clock has the correct time and is grossly normal. Recall scores of 0 irrespective of normal clock drawing and recall scores of 1-2 with abnormal clock drawing score correlate with dementia¹⁰.



Prevention of Post-operative Cognitive Decline

A careful and thorough preoperative assessment of cognitive function is important and those at risk of cognitive decline should be informed of the risk at their preoperative visit. A number of preventative measures should be considered in the perioperative setting:

- Preoperative assessment of haemoglobin and electrolytes (including magnesium and calcium) with appropriate correction
- Avoidance of prolonged fasting time and risk of dehydration
- Administration of regular medication particularly statins and those for neuro-degenerative disorders
- Maintenance of normothermia, normoxia and normocarbida
- Minimise use/avoidance of opiate based medication in the post-operative period – consider regional anaesthesia
- Non-pharmacological therapies: mobilisation and exercise, cognitive stimulation, support of circadian rhythms with sleep protocols and hygiene, vision and hearing aids^{1,11,12,13}

Summary

Post-operative cognitive impairment is associated with increased mortality and morbidity. It is imperative that pre-operative screening for cognitive impairment is a routine part of the evaluation of the older patients scheduled for major surgery, as this will allow for significant risk stratification and appropriate multidisciplinary involvement to allow for subsequent prophylaxis, surveillance and treatment.

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