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Cognitive impairment in older adults: a guide to assessment

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Cognitive impairment is common in older adults. It may be considered in terms of four broad categories:

- cognitive impairment that has been present since development (intellectual disability (ID))
- cognitive impairment resulting from a fixed insult during adulthood such as a head injury
- acute cognitive decline, largely delirium
- chronic cognitive decline, largely dementia.

Clinical assessment is useful to differentiate between these categories.

Diagnostic criteria

The diagnosis of ID rests on three elements:

1. significant sub-average general intellectual functioning, usually taken as an IQ <70
2. deficits in adaptive behaviour
3. that both these features arise during development.

The diagnosis is usually in place for adults with moderate-to-profound ID, but the diagnosis may not be recorded for many of the million or so adults in the UK with mild ID (IQ 50–69) who have basic literacy and numeracy skills.[1]

Delirium is diagnosed when there is an acute change in a person's cognitive abilities or perception together with altered consciousness that has a presumed medical or drug-related aetiology. It is therefore associated with drug withdrawal, most commonly from alcohol. Hypoactive delirium, where consciousness is depressed is more common than hyperactive delirium, but since delirium is typically characterised by hour-to-hour fluctuations in attention, both hypoactive and hyperactive states may occur in the same person. Delirium occurs in around 20% of older inpatients[2] and is associated not only with increased length of stay, but also a doubling of mortality.[3]

In contrast with delirium, dementia depends on cognitive decline occurring over at least six months which is usually not associated with changes in consciousness. To make the diagnosis, cognitive decline has to impair social or occupational functioning. Dementia is common, affecting 5% of people over 65 years and 20% over 80 years of age. In a typical district general hospital of 500 beds, about 100 inpatients will have dementia. The diagnosis of dementia is not always known before hospital admission: for example, currently in Scotland primary care dementia registers contain only 50% of the total number of people expected to have dementia as predicted by representative epidemiological studies. The diverse pathologies that lead to dementia result in a broad range of possible presentations. In addition, dysphasia, depression, sensory impairments and non-convulsive epilepsy can easily be mistaken for dementia unless careful assessment is performed.

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Principles of cognitive assessment

Cognitive assessment deserves the same rigorous approach as any other assessment, such as an electrocardiogram. It should be undertaken in a quiet environment with appropriate lighting where interruptions are unlikely to occur. The patient should be asked if they would like a carer or staff member to be present; if someone is present, they should be asked not to interrupt the assessment or give verbal or non-verbal prompts. The assessor should use a clear, audible voice and any hearing aid should be switched on and working. The patient should not be hurried and should also be assured that there is no pass or fail. Establishing rapport with the patient is important before testing: cognitive tests are often performed in the context of a more general assessment of the patient's health status.

Cognitive tests

A wide range of tests are available to assess both premorbid and current cognitive abilities. Those presented here are based on the Royal College of Physicians guideline for delirium in older people[4] and the British Geriatrics Society 'Delirious about dementia' toolkit.[5]

Premorbid cognitive ability

- The National Adult Reading Test (NART)[6] is a direct assessment based on irregular phoneme-grapheme correspondences in English for 50 words which provides a reliable estimate of premorbid IQ[7] unaffected by delirium or dementia.[8] The test is only appropriate if the patient's first language is English.
- The Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE)[9] is an indirect assessment from a third party who has known the patient for some time. It scores current (usually set just prior to the onset of the presenting illness) performance on cognitive and functional items against performance 10 years previously.

Current cognitive ability

- The Mini-Mental State Examination (MMSE) is a brief test of attention, orientation, short-term recall, language and visuospatial construction abilities. It has a strong verbal bias.

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- The CLOX clock drawing test assesses several non-verbal domains and is scored out of 14 (Box 1).

Interpreting the tests

The principle is to compare current cognitive status to premorbid cognitive ability. First a score of less than 10 out of 50 correct on the NART indicates low premorbid IQ and life course history should be sought to ascertain whether the patient may have a diagnosis of mild ID; specialist assessment is indicated. Secondly, patients who score >23/30 on MMSE or >10/14 on the CLOX are unlikely to have major cognitive impairment; no further evaluation is required at this point. Patients who score <24/30 on the MMSE or <11/14 on the CLOX require further evaluation to determine if they have delirium, dementia or both. Any previous MMSE or CLOX that predates the current episode should be searched for to ascertain the extent and duration of cognitive decline. The utility of such records is a strong reason why cognitive assessment should be a routine part of any comprehensive assessment of older patients' health. When previous cognitive tests scores are unavailable, the IQCODE should be administered. Each IQCODE questions is scored 1–5: 5 indicates substantial decline and 3 no change. A score >52 indicates significant decline in cognitive abilities over the 10 years predating the current episode and, together with a low current cognitive ability score, suggests dementia. Current cognitive impairment in the presence of a normal IQCODE score suggests delirium. In either case, the presence of delirium should be assessed formally with the Confusion Assessment Method (CAM)[10] (Box 2) because people with dementia are at a high risk of delirium.

Box 1. The CLOX drawing test.

How to administer

Have an A4 sheet of paper with a thickly outlined circle taking up about one-third of the sheet printed on it.

Turn the paper over on a light-coloured surface to present a blank sheet; the circle outline will be visible through the sheet.

Ask the patient to 'draw a clock that says 1:45. Set the hands and numbers on the face so that a child could read them'.

Repeat the instructions until they are clearly understood.

Once the patient begins to draw, no further assistance is allowed.

How to score

Score 1 point for each item unless otherwise stated:

- Does the figure resemble a clock?
- Outer circle present?
- Diameter >1 inch?
- All numbers inside the circle?
- Spacing intact? (if yes skip next) (scores 2)
- If spacing errors are present, are there signs of correction or erasure?
- Only Arabic numerals?
- Only numbers 1–12 among the Arabic numerals?
- Sequence 1–12 intact? No omissions or intrusions.
- Only two hands present?
- All hands represented as arrows?
- Hour hand between 1 and 2 o'clock?
- Minute hand longer than hour?
- None of the following:
  1. hand pointing to 4 or 5 o'clock?
  2. 1:45 present?
  3. intrusions from 'hand' or 'face' present?
  4. any letters, words or pictures?
  5. any intrusion from circle below?

Box 2. The Confusion Assessment Method (CAM). Adapted from reference 10. © 2003, Sharon K Inouye MD, MPH.

How to administer

This assessment is directed at the patient plus their family, carer and/or staff.

The assessment

Feature 1 Acute onset and fluctuating course

This feature is usually obtained from a family member or nurse and is shown by positive responses to the following questions:

1 Is there evidence of an acute change in mental status from the patient's baseline?

2 Did the (abnormal) behaviour fluctuate during the day, that is, tend to come and go, or increase or decrease in severity?

Feature 2 Inattention

This feature is shown by a positive response to the following question:

1 Did the patient have difficulty focusing attention, for example being easily distractible or having difficulty keeping track of what was said?

Feature 3 Disorganised thinking

This feature is shown by a positive response to the following question:

1 Was the patient's thinking disorganised or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?

Feature 4 Altered level of consciousness

This feature is shown by any answer other than 'alert' to the following question:

1 Overall, how would you rate the patient's level of consciousness?

- alert (normal)
- vigilant (hyperalert)
- lethargic (drowsily, easily aroused)
- stupor (difficult to arouse)
- coma (unarousable).

How to score

The CAM is positive if feature 1 AND feature 2 AND either feature 3 or feature 4 are present.

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Conclusions

Cognitive impairment is common and easily missed: it should be formally assessed in all older inpatients. If a new diagnosis of ID or dementia is suggested, referral to appropriate specialist services should be made.

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CONCISE GUIDANCE

Advance care planning – National guidelines

Prepared by the British Geriatrics Society, Royal College of Physicians, Royal College of Nursing, Royal College of Psychiatrists, Royal College of General Practitioners, British Society of Rehabilitation Medicine, Alzheimer's Society, Help the Aged and the National Council for Palliative Care

The aim of this guideline is to inform health and social care professionals on how best to manage advance care planning (ACP) in clinical practice.

At the core of current health and social care are efforts to maximise individuals' autonomy, promote patient-centred care, offer choice and the right to decide one's own treatment or care. This can be difficult to achieve when an individual has lost capacity – the ability to make their own, informed decision. ACP is one method of enhancing autonomy, not only where an individual has lost capacity, but also by focussing discussion on the individual's values and preferences throughout the time they are in contact with health or social care professionals.

Whilst ACP has been used for some time in North America, there has been relatively little experience in the use of ACP in the UK. This set of concise evidence-based guidelines has therefore been prepared to guide practitioners.

The guideline contains a number of recommendations, such as training for and implementation of ACP, when and with whom to consider having ACP discussions, the context and content of discussions, preparing ACP documents, and dealing with individuals with progressive and cognitive impairment.

This concise guidance is primarily aimed at professionals in England and Wales and will be relevant to all doctors involved in ACP, especially geriatricians, psychiatrists, general practitioners, general physicians and acute medicine specialists.

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