Introduction

Dementia implies a decline in general cognitive function and interferes with many aspects of one's life. In a recent survey, it was estimated that more than 17% of the population aged over 70 in Hong Kong suffered from mild or very mild dementia. Their prevalence increases with age. As the Hong Kong population is rapidly aging, it is anticipated that the problems related to dementia are escalating rapidly. The impact of dementia on the daily living of patients and their carers can be paramount. There are numerous causes of dementia or cognitive impairment. Early detection and intervention of dementia can allow necessary investigations to be initiated. Reversible causes may be identified and treated earlier. Further significant deterioration may be prevented. Early diagnosis can also facilitate more proactive planning of the patients and their carers.

Clinical Diagnosis of Dementia

There is no single screening test for dementia. Clinical judgement is essential. ICD-10 and DSM-IV are two sets of internationally accepted criteria. In ICD-10, dementia is described as a syndrome due to disease of the brain, usually of a chronic or progressive nature in which there is disturbance of multiple higher cortical function including memory, thinking, orientation, comprehension, calculation, learning capacity, language and judgement. Consciousness is not clouded. The impairments of cognitive function are commonly accompanied, and occasionally preceded by deterioration in emotional controls, social behaviour or motivation. The DSM-IV definition has similar components, and emphasises on the necessity for a detrimental influence upon activities of daily living.

In Hong Kong, Alzheimer’s disease (AD) and vascular dementia (VaD) are the two most common causes of dementia in the elderly population. In ICD-10, the criteria for AD can be summarised as: presence of a dementia; insidious onset with slow deterioration; absence of evidence that the cause may be due to another condition such as hypothyroidism; and absence of sudden onset or focal neurological signs. The key features of VaD are: a dementia resulting from vascular disease; uneven impairment of cognitive functions; abrupt onset or stepwise deterioration; focal neurological signs and symptoms; may coexist with AD. It should be noted that overlap of AD and VaD is not uncommon. It has been shown that majority of people with AD have concomitant cerebrovascular pathology including a third who have cerebral infarction.

Patients who present with Parkinson’s disease may develop dementia. Dementia with Lewy Bodies (DLB) may also present with motor parkinsonism. For DLB, other typical features include fluctuating cognition with pronounced variations in attention and alertness and recurrent well formed visual hallucinations. DLB patients seem to be very sensitive to antipsychotic medications, which can considerably worsen parkinsonism symptoms and increase their risk of falls.

Particular attention should be paid that medical problems could affect cognitive function. Clarfield has reviewed 32 studies involving 2889 subjects and the commonest causes of “reversible or partially reversible dementia” are: drugs, depression, metabolic causes, thyroid disease, vitamin B12 deficiency, calcium disturbance, liver disease, normal pressure hydrocephalus, subdural haematoma, neoplasm. Some of these causes may be more amenable to treatment before dementia is established. People presenting with Mild Cognitive Impairment (MCI) should receive similar degree of medical assessment as those who present with dementia.

Mild Cognitive Impairment (MCI)

MCI refers to the clinical state in which a subject is cognitively impaired, usually in the memory domain, which is greater than that expected for an individual’s age and education level but not demented. Typically, subjects are aware of their deficit but corroboration by an informant is usually useful. Being distinct from dementia, MCI does not interfere notably with activities of daily life.

MCI with memory complaints, which is classified as the amnestic subtypes of MCI, has been consistently shown to have a high risk of progression to dementia, particularly of AD. In a 3-year multi-centre randomised clinical trial, the rate of progression from amnestic MCI to AD was found to be 16% per year. While memory is the domain usually being affected, other cognitive domains, including language, attention/executive function, and visuospatial skills, may also be affected and should be evaluated.

The term MCI has been widely used in research studies.
However, it is controversial whether it should be used in clinical practice as a medical diagnosis. MCI seems to be an umbrella term including heterogeneous pre-dementia conditions. It is possible that persons with MCI may revert back to normal. On the other hand, it was argued that “patients with a mild cognitive impairment should be recognised and monitored for a cognitive and functional decline due to their increased risk for subsequent dementia.”

### Clinical Assessment

The clinical assessment of suspected cognitive impairment in either MCI or dementia is similar. The history is the cornerstone of any assessment. Some patients may not have awareness of cognitive deficits or the high quality of information is limited by the cognitive impairment. The history should be verified by a reliable informant and supplementary information from other sources. The onset of AD is typically gradual and there is progressive decline. The onset of cognitive impairment in VaD can be sudden. A short history with fluctuation in consciousness level might suggest delirium, either as a primary cause or superimposed on a dementia.

The clinician should perform a mental state examination. The presence of features such as depression, hallucinations, delusions, paranoid ideations or misidentification phenomena should be assessed. For basic cognitive testing, the Cantonese version of Mini-Mental State Examination (MMSE) has been widely used in local clinical settings. It is useful in assessing and monitoring the change in general cognitive performance for local elderly persons. It is noteworthy that the performance in MMSE is shaped by education. Since many older people are illiterate, it is better to combine the MMSE score with reports from family members about cognitive and functional capacity for the assessment.

The general neurological examination should be done. Abnormalities such as parkinsonism, focal neurological deficits or deficits in other parts of the nervous system should be looked for. It is possible that patients with dementia will have concurrent medical illnesses. The symptoms may be masked. These medical illnesses may worsen the cognitive impairment and cause changes in behaviour. Possible illnesses include acute infections, electrolyte imbalance, metabolic imbalance and side effects of medications. The neurological examination should be complemented by a general medical examination and other investigations.

Various laboratory and radiological tests are useful in evaluating a patient who has cognitive impairment, which are outlined in Table 1. In selected cases testing for HIV should be considered. A urine culture may be important in some cases. These investigations may reveal potentially treatable causes of cognitive impairment. Impaired renal function or liver function tests may affect treatment decisions. Vascular risk factors, such as hypertension, diabetes, abnormal lipid profile, as revealed by the investigation need additional medical attention. The computed tomography or resonance imaging of the brain can be used to look for structural lesions, such as stroke, neoplasm or subdural haematoma.

Patients with dementia may present with different kinds of risks. There are risks of harm to one’s self or to others. These risks may be related to the presence of other psychiatric features, such as hallucination, delusion and depression. The patients may get lost in unsafe areas. Poor self care and judgement may cause risks to one’s physical health and well being. Systematic evaluation of risks or risk assessment is valuable.

### Management

There is no single recipe in management. The management plan depends on the results of the assessment and should address the needs of the patients. Some general approach may be still useful. After full assessment of the patient, it would be helpful to construct a problems list. These problems should be prioritized because it is unlikely that all problems can be tackled at once. It is also helpful to involve both the patient and his/her carer in the management plan. In complicated cases or cases with high risk, specialist care or input from a multidisciplinary team is necessary.

The causes of MCI or dementia are numerous. If a treatable cause is identified, it should be managed accordingly. However, it may not be possible at the initial assessment to determine whether delirium, depression or other treatable conditions is a primary diagnosis or a co-morbid condition. In either case, appropriate treatment should be initiated and the patient should be reassessed.

The risk of dementia has been shown to increase with vascular risk factors, in particular hypertension. Other important risk factors include diabetes mellitus, raised homocysteine, and smoking. The vascular risk factors may increase the risk of both VaD and AD. Primary and secondary prevention of stroke appear to be useful in the prevention of dementia. Aspirin therapy can help to prevent further ischaemic damage in VaD. Treatment of hypertension, hyperlipidaemia, adequate control of diabetes and cessation of smoking are also useful.

Donepezil, rivastigmine, galantamine are the commonly used drugs in the symptomatic treatment of mild AD. They are cholinesterase inhibitors. Little evidence recommends one over the other. They appear to be effective in the treatment of AD over 6-12 months, improving their cognition, activities in daily living and global functioning. However, they do not appear to have a significant impact on the underlying pathological process of AD. As for the amnestic MCI, these drugs may have transient effects. A large trial showed that no significant differences in the probability of progression from amnestic MCI to AD in patients allocated vitamin E or donepezil, compared with placebo, during the 3 years of treatment. However, there was significant difference recorded favouring the donepezil group on various measures during the first 12 months of the study including delay of diagnosis of AD. Cholinesterase inhibitors have
been suggested to be used in managing other features of dementia. In DLB, the visual hallucinations are associated with greater deficits in cortical acetylcholine and may respond to cholinesterase inhibitors.23

Caring for a person with a chronic mental condition is very stressful. The stress may be psychological, physical, financial or social. In the community, the burden of caring the patients often falls on one's spouse, who are themselves often elderly and frail. Education, support groups and provision of information alone may not be efficacious in reducing carer stress. Other psychosocial interventions, such as respite care, day care centres, home help services, residential care, financial support, individual counselling, family therapy, should be considered.

Conclusion

Dementia is an important clinical problem and should be intervened at an early stage. Early identification of dementia can facilitate detailed assessment, control of risk factors and initiation of treatment. Clinical assessment should include evaluation of cognitive functioning, risk assessment, and investigations of possible treatable causes. Proper involvement of patient and carer in the management plan can be important.

Table 1. Useful investigations for dementia or cognitive impairment

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<th>Blood investigations:</th>
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<tr>
<td>Complete blood count</td>
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<td>Liver function test</td>
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<td>Electrolytes, urea, creatinine, calcium</td>
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<td>Thyroid function studies</td>
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<td>Syphilis serology</td>
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<td>Vitamin B12 level</td>
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<td>Blood glucose</td>
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Electrocardiogram

Chest X-Ray

Non-contrast computed tomography or magnetic resonance imaging of brain

References