



# Management Tips and Traps: Managing co-morbid disease in persons with dementia

## Series 3: Chronic Obstructive Pulmonary Disease

### Background

There are multiple pathogenic mechanisms that have been proposed in the process of neurotoxicity and subsequent decline in COPD. These include hypoxemia, hypercapnia, hypertension and atherosclerosis related to smoking and chronic inflammation.

### Tips: to do

#### 1. Dementia awareness is key to tailoring management

Cognitive impairment has multiple deleterious effects on COPD outcomes (Dodd et al., 2010).

Pre-emptive measures involve screening for cognitive impairment in individuals with COPD early. Furthermore, ascertaining whether individuals with cognitive impairment have adequate assistance and support with disease self-management tasks may allow for earlier interventions such as involving district nursing or educating caregivers on how to aid and/or supervise medication administration (Chang et al., 2013).

#### 2. Improving Adherence

Adherence to therapy is often poor in persons with severe COPD because of cognitive dysfunction and loss of manual dexterity, which prevents appropriate use of inhaler devices.

Poor compliance is a risk factor for acute exacerbations of COPD. Pertinently, promoting the adherence to therapy is one of the key components of the management strategies known to improve health status and reduce hospitalization of COPD patients (Antonelli-Incalzi, 2008).

Mini Mental State Examination (MMSE) scores <24 and an inability to copy pentagons indicate a high probability that patients will need an alternative to self-administered inhaler therapy to treat asthma or COPD.

Other inhaler devices are generally as or more difficult compared to using a turbuhaler. The most appropriate options for patients in the clinical setting are assisted use of a metered dose inhaler with large-volume spacer, assisted dry powder inhaler or help with use of an air pump and nebulizer.

Timing and sequence of steps required to administer a dose of inhaled therapy needs to be taken on by a cognitively intact person with sufficient training (Board, 2006).

Some management options to cater for deficits in cognitive domains of memory and executive function include:

- Simplification of the medication regimen
- Limit the dosing frequency if possible
- Use written action plans in large type fonts (Hanania et al., 2010)

#### 3. Assessment of standard metered dose inhaler (MDI) technique at each clinic visit

Cognitive function and praxis are important determinants as to whether a patient may reliably learn the use of an inhaler device (Allen, 2002).

Mastering inhaled medication delivery device technique is a challenging problem in the older person. Inappropriate technique is common despite patients having received detailed usage instructions.

In patients with dementia, this may be further limited by an inability to retain knowledge of the technique and steps required for sound inhaler technique. To counter this, every patient's MDI technique should be observed at every clinic visit where patients should be re-instructed as required (Hanania et al., 2010; Allen, 1997).

#### 4. Encouragement of physical activity and oxygen therapy

The impact of COPD on cognitive abilities may be partially reversibly through oxygen therapy and physical activity (if chronic hypoxemia is the contributing mechanism for cognitive impairment).

If patients fail to use oxygen supplementation when required they may experience deterioration in cognitive function.

## Traps: to avoid

### 1. Over reliance on conventional lung function testing which may be unreliable

Individuals with dementia are less likely to be able to perform lung function testing due to disorders in mobility and coordination (Frohnhofen, 2011).

The presence of dementia increases the risk of under diagnosis and as a consequence, of under treatment of the underlying airways disease.

Respiratory impedance measurements using forced oscillation technique which does not require performance of respiratory manoeuvres may be an appropriate alternative.

### 2. Exclusive use of global cognitive testing and overlooking assessment of executive domain

The MMSE is a commonly used screening tool for dementia; however, it has significant limitations and does not adequately assess executive functioning making it an unreliable screening measure for early stages of dementia.

Executive functions consist of planning, decision making, working memory, responding to feedback, inhibition and mental flexibility, all of which are required to effectively coordinate and execute self-management tasks.

In the clinical setting, this issue may be circumvented by utilizing 'executively focused' neuropsychological batteries or by systematically observing and recording a patient's understanding and ability to undertake complex daily actions (Ismail, 2010).

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## Resources about dementia

Dementia Training Australia: <https://www.dementiatrainingaustralia.com.au>

Alzheimer's Australia: <https://www.fightdementia.org.au>

Dementia Support Australia: <http://dbmas.org.au>

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