Asthma
can occur in the older person

Up to 35% of people aged over 55 years who have asthma remain undiagnosed. Identification and appropriate treatment can make a large difference to health outcomes in this patient group.

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Asthma is common in the Australian adult population, with approximately one in eight having doctor-diagnosed disease.[1] Studies from Australia and elsewhere show that the care of large proportions of people with asthma does not correspond with current recommendations.[2,3] In particular, use of preventive anti-inflammatory medications in adults remains suboptimal.

Asthma occurs in 15% of Australians aged over 55 years, but under-recognition is higher than in younger age groups. A recent study of a random population of 4000 adults in North West Adelaide revealed that around 35% of those aged over 55 years who had significant reversibility of airway obstruction (i.e. at least 12% and 200 mL increase in FEV_1 with bronchodilators) had not been diagnosed with asthma.[4] Importantly, these individuals had, on average, similar symptoms but a greater bronchodilator response as those who had been diagnosed and treated.

Steps in management

In published guidelines,[5] three broad steps in asthma management may be identified. These can be tailored to patients in the older age group and summarised using an ABC approach:

- **A** – Awareness of the potential for asthma in the older person
  - – Accurate diagnosis
  - – Assessment
- **B** – Best lung function by avoidance of triggers
  - – Best lung function by appropriate use of medication
- **C** – Control of asthma by a written action plan
  - – Control of asthma by regular review with education.

IN SUMMARY

- **Asthma does occur in older people and can present as a new diagnosis. Up to 35% of people aged over 55 years with asthma are undiagnosed.**
- **It is important to remember that older people with asthma may attribute reduced exercise capacity to ageing. Consideration should be given to screening this age group for asthma.**
- **Drug treatments for comorbidities are common in older patients and are relevant potential trigger factors for asthma.**
- **Issues regarding inhalers influence the choice of medication in older patients. Potential problems include poor co-ordination or arthritis, and oropharyngeal side effects.**
- **Reduced perception of bronchoconstriction is more common in older patients. Confirmation of lung function with objective testing is often helpful in such cases.**
- **A written action plan is an essential part of management and may need to be given to a patient's carer.**
- **Important gains in quality of life can be achieved by treating asthma in older people appropriately.**

Step A

Awareness

Asthma does occur in older people and can present as a new diagnosis.[6] It needs to be considered when any patient over 55 years of age presents with shortness of breath, cough, wheeze or chest tightness, especially at night or with exertion.

Many older people expect shortness of breath or decline in functional capacity with ageing and may not complain of symptoms. Therefore, consideration should be given to screening patients in this age group for asthma by asking about walking distance or functional capacity at routine review consultations. A number of possible measurements tools may be used and allow comparison of status over time, such as the MRC Dyspnoea Scale (Table) or metabolic equivalents.[7,8] Any decline over the past one to two years should prompt specific questioning about possible asthma symptoms.

Accurate diagnosis

Asthma is a clinical diagnosis. Suggestive features in the history include:

- episodic symptoms, especially nocturnal or on exertion
- identification of possible triggers, such as animals, dust or specific medications (e.g. beta blockers, aspirin or NSAIDs)
- a past history of asthma or use of asthma medications
- hayfever
- a family history of asthma.

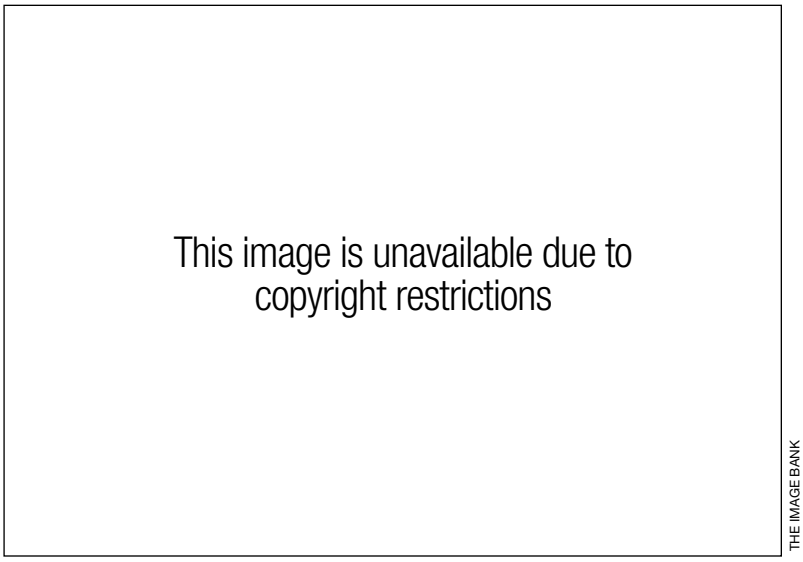
It may not be possible to make an accurate diagnosis at the first presentation. Viral infections commonly trigger exacerbations in both chronic obstructive pulmonary disease (COPD) and asthma, making it difficult to define the underlying disease; follow up is particularly important in such cases.[9] Points favouring COPD would include a smoking history (almost universally), steadily progressive symptoms and persistent sputum production. Clearly it is also important to exclude other significant conditions, such as lung cancer or cardiac failure, although asthma may coexist with these.

For patients in whom the diagnosis remains unclear, a therapeutic trial of asthma treatment may be of value. Possible approaches are as required salbutamol (Airomir, Asmol, Epaq, Ventolin) or terbutaline (Bricanyl) with:

- oral corticosteroid – prednisolone or prednisone (37.5 to 50 mg daily), for 10 to 14 days, and/or
- inhaled corticosteroid, such as fluticasone propionate ([Flixotide], 500 to 1000 µg daily), budesonide ([Pulmicort], 800 to 1600 µg daily), or beclomethasone dipropionate ([Qvar], 500 to 1000 µg daily), for four to eight weeks.

Relative contraindications for oral corticosteroids are common in the elderly and must be taken into account. Examples include diabetes, hypertension, glaucoma and mood disorders.

It is important to recognise that a trial of therapy is designed to establish a clinical response and not necessarily to achieve total control of symptoms in the first instance. Assessment of outcome should



THE IMAGE BANK

Figure. Checking inhaler technique at review is important.

Table. Medical Research Council dyspnoea scale*

Grade	Degree of dyspnoea
Grade 1	Breathless only with strenuous exercise
Grade 2	Short of breath when hurrying or walking up a slight hill
Grade 3	Walks slower than most people of the same age because of breathlessness or stops for breath when walking at own pace on the level
Grade 4	Stops for breath after walking about 100 metres or a few minutes on the level
Grade 5	Too breathless to leave the house, or breathless when dressing

*Adapted from Fletcher CM, Elmes PC, Fairbairn MB, et al. The significance of respiratory symptoms and the diagnosis of chronic bronchitis in a working population. BMJ 1959; 2: 257-266.

preferably include objective measurements such as spirometry or daily peak expiratory flow (PEF). Objective findings that support a diagnosis of asthma include:

- an acute increase in FEV_1 of more than 12% and more than 200 mL from base - line in response to 400 µg inhaled salbutamol or 500 µg inhaled terbutaline
- a variation in PEF of more than 20% over a period of days
- an increase in FEV_1 of more than 12% and more than 200 mL, or increase in PEF of more than 20% with a therapeutic trial over four to eight weeks.

Functional outcomes should focus on items that are important to each individual. Questions that could be used to assess change with therapy might involve the number of stops the patient needs to make to complete activities like walking to the shops or letterbox, hanging out washing, or showering or dressing.

Physical examination is not specific for asthma, and provides an opportunity to exclude other diseases. For example, it is useful to palpate the lymph nodes for cancer and to listen for crackles for cardiac failure or interstitial lung disease.

Assessment

An assessment of asthma severity is particularly important for a patient who is presenting for the first time or has a new diagnosis of asthma because this will guide initial treatment. For example, a patient with persistent but infrequent symptoms is likely to have mild asthma and can be started on a low daily dose of an inhaled corticosteroid, such as 100 to 200 µg of fluticasone. Conversely, a patient with symptoms most days and nights is likely to have severe asthma and may require a higher daily dose of inhaled corticosteroid, such as 500 µg fluticasone, 500 µg beclomethasone or 800 µg budesonide.

Regular assessment is important for patients with an established diagnosis of asthma. Good control implies no symptoms, use of short acting bronchodilator medication only once or twice per week, and best possible lung function and exercise capacity. Persistent symptoms imply control is less than satisfactory and should stimulate a complete re-evaluation. It is appropriate to consider reviewing the diagnosis, ensure inhaler technique is adequate and medications are being used according to the recommended regimen, and check that avoidance of relevant triggers has occurred. If the asthma diagnosis appears accurate, the next step towards achieving good control is to increase the level of medication – that is, increase the dose of inhaled corticosteroid and/or add a long acting beta agonist.

It is important to be alert to the patient who has no symptoms but relatively poor lung function (FEV_1 or PEF less than 80% predicted). This may suggest poor bronchoconstriction perception and lead to development of a new management strategy with PEF monitoring.

Step B

Best lung function by trigger avoidance

Avoidance of relevant trigger factors is important when a diagnosis of asthma has been established. Trigger factors can be related to the home (e.g. pets or dust), hobbies or work (e.g. solder, wood or grain dust, or chemicals such as isocyanates). Occupational asthma is an important issue, even for semi-retired patients. Symptoms are usually better when the patient is not attending work – improvement on weekends or holidays is an important marker. Allergy testing may be appropriate in some cases of new onset asthma in older patients.

Comorbidities are common in this age group, so drugs are relevant potential trigger factors. Examples include aspirin, NSAIDs and beta blockers (including eyedrops for glaucoma).

Best lung function by appropriate medication

The 'lowest dose' principle for achieving good control of asthma applies in all age groups – including older patients. Good evidence indicates that control can be achieved with a lower dose of inhaled corticosteroid by adding a long acting beta agonist.[10]

In older patients with persistent symptoms, it is important to add a long acting beta agonist to inhaled corticosteroid above a medium range. If control is not achieved by a daily dose of 250 µg beclomethasone, 400 µg budesonide or 250 µg fluticasone or equivalent (assuming adherence and good inhaler technique) then a long acting beta agonist such as salmeterol (Serevent) or eformoterol (Foradile, Oxis Turbuhaler) should be added. Combined preparations of fluticasone with salmeterol (Seretide) and budesonide with eformoterol (Symbicort Turbuhaler) are commercially available, and approved on the PBS for use when patients are stabilised on the individual components.

Reduced perception of bronchoconstriction is more common in older people, so confirmation of good lung function with objective testing is often helpful. Spirometry is the gold standard for objective testing, and is increasingly available in general practice. However, intermittent PEF monitoring may be needed in some settings.

A number of issues regarding inhalers influence the choice of medication in an older patient. Use of a spacer improves drug delivery with a metered dose inhaler and reduces problems with co-ordination and oropharyngeal side effects such as sore throats and dysphonia; some patients prefer small volume spacers over large ones. Breath actuated inhalers do not require the same level of co-ordination as metered dose inhalers, but technique still needs to be reviewed regularly. A dry powder device may be an option for older patients with poor co-ordination or those who desire a dose counter. Some patients prefer a device that makes a sound when the dose is delivered – pressurised metered dose inhalers may be suitable. Arthritis may limit ability to use inhalers and delivery aids can assist – a Haleraid for

pressurised metered dose inhalers may be available from retail pharmacists (via wholesale pharmaceutical suppliers) or a device fitting the bottom of Turbuhalers from AstraZeneca representatives for patients with hand weakness or deformity. A breath actuated device may be an acceptable alternative.

Step C

Control with an action plan

Control with an action plan means providing patients with written instruction about what to do when they have asthma symptoms or are using a short acting beta agonist frequently. For example, if an individual is waking at night or using an additional four doses of salbutamol or terbutaline per day then it is appropriate to increase the inhaled corticosteroid to a high dose (at least 1000 µg fluticasone daily, or equivalent). If further deterioration occurs then the patient will require oral prednisolone for seven to 10 days. If still further deterioration occurs (e.g. the patient needs to use a short acting beta agonist at least every two hours) then he or she should attend the closest hospital.

In general, action plans based only on changes in PEF to indicate a need to change therapy do not provide superior outcomes to those based on symptoms alone. However, suspected inability to perceive symptoms adequately in an older patient is an indication to use a change in either functional outcomes (such as a change in walking distance) or PEF as a marker for changing medication dose.

Control by regular review with education

Regular review provides opportunities for the medical practitioner to:

- assess control (symptoms, functional status, and, preferably, objective testing)
- check whether patients understand their action plan by asking what they would do if they need to use their short acting beta agonist inhaler an extra four times a day
- check adherence, inhaler technique and environmental issues.

One of the challenges of asthma management is showing patients that there is a tangible benefit in the review process. This is particularly important when the limited social or physical resources of elderly people may make attendance difficult. Qualitative research has shown that many feel the only gain in regular reviews is arepeat prescription.[11] Checking understanding of action plans and inhaler technique may be strategies for showing patients that there is benefit in review appointments. Older patients who have severe asthma or patients who

require high dose medications may be better comanaged with a specialist.

Conclusion

It is important to be aware that asthma can occur in older patients. This, together with care in attributing breathlessness to ageing and reviewing a clinical diagnosis of asthma with the aid of objective testing (where possible), will enable better identification of asthma and improved health outcomes. MT

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DECLARATION OF INTEREST: Dr Adams has received honoraria for presentations from GlaxoSmithKline and AstraZeneca in the last three years. The University of Adelaide has received honoraria on behalf of Professor Ruffin for presentations from GlaxoSmithKline and AstraZeneca in the last three years (and 3M Pharmaceuticals and Merck Sharp & Dohme previously). Professor Ruffin was a member of the steering committee that advised GlaxoSmithKline on the conduct and analysis of the Asthma in Australia prevalence study.