Respiratory conditions and urinary incontinence

Mariama Barrie

Urinary incontinence (UI) has been associated with chronic respiratory symptoms, which impact on patient quality of life (da Silva Paes et al, 2016). Chronic respiratory symptoms, such as coughing, wheezing, and dyspnoea, and patients with chronic chest conditions, such as asthma, bronchitis or chronic obstructive pulmonary disease (COPD), are associated with increased occurrence of UI. Women with respiratory symptoms have more severe symptoms and are more likely to have stress urinary leakage than those without. This paper provides an overview of asthma, and highlights the importance of community nurses not only addressing issues associated with respiratory diseases, such as ensuring that there is a personalised asthma action plan (PAAP) in place for those with asthma, but also assessing urinary incontinence to evaluate occurrence and decide upon measures that can be taken to prevent or lessen any leakage.

KEYWORDS: Asthma ■ Urinary incontinence ■ Assessment and management

Asthma is a chronic respiratory disease that affects the airways by causing inflammation, constricting the passage of the lungs and making it difficult to breath, which can lead to a host of complications, such as pneumonia or respiratory failure, if left untreated (Cydulka and Bates, 2013; Durani and Busse, 2014; Tingley, 2017). The airways are tubes that carry air in and out of the lungs. If a person has asthma, the inside walls of their airways become sore and swollen. This makes them very sensitive, and patients may react strongly to things that they are allergic to or find irritating. When airways react, they get narrower, resulting in less air getting to the lungs. Symptoms of asthma include: wheezing, coughing, especially early in the morning or at night, chest tightness and shortness of breath (National Asthma Education and Prevention Program Expert Panel Report 2007).

However, not all people who have asthma have these symptoms, and having them does not always mean that the person has asthma. Diagnosis is based on patient history, asthma lung function tests, medical history, and a physical examination. Allergy tests may also be needed. Worsening asthma symptoms are referred to as an asthma attack. Severe asthma attacks may require emergency care and can even be fatal. Asthma is treated with two kinds of medicines: quick-relief medicines to stop asthma symptoms, and long-term control medicines to prevent symptoms.

CAUSES OF ASTHMA

Asthma is caused by swelling (inflammation) in the airways, hence when an asthma attack occurs, the lining of the air passages swells and the muscles surrounding the airways become tight. This reduces the amount of air that can pass through the airway (Booth, 2015). In people who have sensitive airways, asthma symptoms can be triggered by breathing in substances called allergens or triggers. Common asthma triggers include: animals (pet hair or dander), dust mites, certain medicines (aspirin and other non-steroidal anti-inflammatory drugs [NSAIDS]), changes in weather (most often cold weather), chemicals in the air or in food, exercise, mould, pollen, respiratory infections, such as the common cold, strong emotions (stress) and tobacco smoke (NHS Choices 2016; Asthma Symptoms, 2018).

Mariama Barrie, continence clinical nurse specialist, Berkshire Healthcare NHS Foundation Trust

Practice point

da Silva Paes et al (2016) evaluated the quality of life of patients with asthma from the Assistance Program for Asthmatic Patients (PAPA) with and without urinary incontinence (UI). The authors used an analytical descriptive cross-sectional study using a sample of 358 women with asthma. Data were collected via the International Consultation Incontinence Questionnaire-Simplified Form (ICIQ-SF), Quality of Life in Asthma Questionnaire (QLAQ-ASTHMA) and Short Form 36 Health Survey (SF-36). The study found a general prevalence of UI of 55.3%. Overall quality of life scores in the SF-36 and QLAQ-ASTHMA were not related to the presence of UI. However, the amount of urine lost was significantly correlated with the subdomains physical aspects, general health, social functioning and mental health of the SF-36 and with socioeconomic and psychosocial domains of the QLAQ-ASTHMA. Urinary incontinence may affect a large proportion of older women with asthma. This study demonstrated the importance of routinely evaluating the occurrence of UI to improve the quality of life of patients with asthma.
The thought of catheterisation is a daunting one, but the procedure needn’t be painful or traumatic. Instillagel anaesthetises the urethra whilst providing broad-spectrum antimicrobial coverage that helps protect her against UTIs, as well as giving essential lubrication. Tried and trusted for 25 years, Instillagel is the triple action urethral gel that you can both rely on.

For further information please contact the CliniMed® Careline on 0800 036 0100.

Just tell her Instillagel is the only triple action gel with an unparalleled track record spanning over 25 years.

The thought of catheterisation is a daunting one, but the procedure needn’t be painful or traumatic. Instillagel anaesthetises the urethra whilst providing broad-spectrum antimicrobial coverage that helps protect her against UTIs, as well as giving essential lubrication. Tried and trusted for 25 years, Instillagel is the triple action urethral gel that you can both rely on.

For further information please contact the CliniMed® Careline on 0800 036 0100.
Substances in some workplaces can also trigger asthma symptoms, leading to occupational asthma (Asthma UK; www.asthma.org.uk/advice/understanding-asthma/types/occupational-asthma/; Fishwick et al, 2008). The most common triggers are wood dust, grain dust, animal dander, fungi, or chemicals.

Many people with asthma have a personal or family history of allergies, such as hay fever (allergic rhinitis) or eczema (Durrani and Busse, 2014). Others have no history of allergies.

**SYMPTOMS OF ASTHMA**

Most people with asthma have attacks separated by symptom-free periods, i.e. it is a variable condition (Booth, 2015). Some people have long-term shortness of breath with episodes of increased shortness of breath, and either wheezing or a cough may be the main symptom. Asthma attacks can also last for minutes or days, and can become dangerous if airflow is severely blocked (NHS Choices, 2016; Medline Plus Trusted Health Information for You, 2017; Asthma Symptoms, 2018). Symptoms of asthma include: cough with or without sputum (phlegm) production, pulling in of the skin between the ribs when breathing (intercostals), shortness of breath which gets worse with exercise or activity, and wheezing (Lugogo et al, 2016; Asthma Symptoms, 2018).

Emergency symptoms that need prompt medical help include: bluish colour to the lips and face, decreased level of alertness, such as severe drowsiness or confusion during an asthma attack, extreme difficulty breathing, rapid pulse, severe anxiety due to shortness of breath, and sweating (Asthma Symptoms, 2018).

Other symptoms that may occur include abnormal breathing patterns, e.g. breathing out takes more than twice as long as breathing in, breathing temporarily stops, chest pain and tightness in the chest (Asthma Symptoms, 2018).

**Exams and tests**

Healthcare professionals will use a stethoscope to listen to the lungs. Wheezing or other asthma-related sounds may be heard. Tests that may be ordered include allergy testing, i.e. a skin or blood test to see if a person with asthma is allergic to certain substances, arterial blood gas (usually only done with people who are having a severe asthma attack), chest x-ray, and lung function tests, including peak flow measurements.

**TREATMENT OF ASTHMA**

The goals of treatment are to control airway swelling and enable patients to carry out normal activities of daily living without asthma symptoms. It is vital that people with asthma and healthcare professionals work together to manage the condition.

**Asthma medication**

As said above, there are two kinds of medicines for treating asthma: control medicines to help prevent attacks and quick-relief (rescue) medicines for use during attacks. Long-term medicines are also called maintenance or control medicines. They are used to prevent symptoms in people with moderate-to-severe asthma and should be taken every day, even when feeling fine (Booth, 2015). Some long-term medicines are breathed in (inhaled), such as steroids and long-acting beta-agonists, others are taken by mouth (orally). Quick-relief medicines are also called rescue medicines. These are taken for coughing, wheezing, trouble with breathing, an asthma attack, and just before exercising to help prevent asthma symptoms caused by exercise.

Patients with asthma should tell their doctor if they are using quick-relief medicines twice a week or more often, as this may indicate that their asthma is not under control and a change in daily medication may be needed (Sims et al, 2011). Quick-relief medicines include short-acting inhaled bronchodilators and oral corticosteroids for when an asthma attack is not going away. Severe asthma attacks necessitate immediate review by healthcare professionals, and can result in a hospital stay, where patients may be given oxygen, breathing assistance, and intravenous (IV) medication.

**Asthma care at home**

It is important that patients are aware of asthma symptoms and are able to take peak flow readings and understand what they mean. Patients should also know which triggers make their asthma worse and what to do when this happens, and how to care for asthma when exercising. As recommended in the National Review of Asthma Deaths (NRAD) (Royal College of Physicians [RCP], 2014), all patients with asthma should have a personal asthma action plan (PAAP), which is developed with their full involvement with a healthcare professional. This is vital to help patients self-care and adhere to treatment, which in turn reduces hospital admissions (Gibson et al, 2003) and even death (Asthma UK, 2015; Stonham, 2015; British Thoracic Society and Scottish Intercollegiate Guidelines Network [BTS/SIGN], 2016).

**PAAPs...**

PAAPs, which detail a person's personal triggers and treatments, should include advice:

- About when to increase medication if symptoms worsen or control is poor
- About how to step down medication when patients are feeling well
- About how to recognise when asthma is worsening
- About how to seek help in an emergency

**Practice point**

A peak flow meter is a simple device, which measures how quickly air can be moved out of the lungs. It can help individuals see if an attack is coming, sometimes even before symptoms appear. Peak flow measurements help patients to know when they need to take medicine or other action. Peak flow values of 50–80% of best results are a sign of a moderate asthma attack. Numbers below 50% are a sign of a severe attack.
CONTINENCE CARE

healthcare professional, ahead of any routine review, if (BTS/SIGN, 2016; NHS Choices, 2016; Asthma Symptoms, 2018):
- Asthma symptoms develop
- An asthma attack requires more medicine than recommended
- Symptoms get worse or do not improve with treatment
- Shortness of breath occurs while talking and peak flow measurement is 50% to 80% of personal best.

The emergency symptoms mentioned previously should prompt individuals to go immediately to A&E.

OUTLOOK (PROGNOSIS)

There is no cure for asthma, although symptoms sometimes improve over time. In the author’s experience, with proper self-management and adherence to treatment, most people with asthma can lead a normal life.

Possible complications

The complications of asthma can be severe and include (NHS Choices, 2016; Asthma Symptoms, 2018):
- Decreased ability to exercise and take part in other activities
- Lack of sleep due to night time symptoms
- Permanent changes in the function of the lungs
- Persistent cough and trouble breathing that requires breathing assistance (ventilator)
- Even death.

PREVENTION OF ASTHMA SYMPTOMS

In the author’s clinical opinion, advice that community nurses can give patients to avoid triggers and substances that irritate the airways, and thereby reduce asthma symptoms, include:
- Covering bedding with allergy-proof casings to reduce exposure to dust mites
- Removing carpets from bedrooms and hoovering regularly
- Using only unscented detergents and cleaning materials in the home
- Keeping humidity levels low and fixing leaks to reduce the growth of organisms such as mould
- Keeping the house clean and keeping food in containers and out of bedrooms. This helps reduce the possibility of cockroaches.

Body parts and droppings from cockroaches can trigger asthma attacks in some people.
- If someone is allergic to an animal that cannot be removed from the home, the animal should be kept out of the bedroom
- Placing filtering material over the heating outlets to trap animal dander
- Regularly changing the filter in furnaces and air conditioners
- Avoiding air pollution, industrial dust, and irritating fumes as much as possible.

In addition, tobacco smoke should be eliminated from the home, as while it does not necessarily cause asthma, it can be a trigger (Booth, 2015). Smoking outside the house is not enough. Family members and visitors who smoke outside

CliniFix® – the Universal Hydrocolloid Securement Device

CliniFix, the unique multi-purpose medical tube holder, is the most comfortable and secure way to hold catheters and most sizes of medical tubing in place. It can be used in two distinct ways for different security needs - a hook and loop securement device for some movement or an inner adhesive strip for extra security. The resealable design allows repeated access. With a skin-friendly hydrocolloid base it can remain in place for up to seven days and no rigid plastic edges, straps or clips means CliniFix fits like a second skin anywhere on the body.

For a free sample of CliniFix, please call our free confidential careline 0800 036 0100 or visit www.clinimed.co.uk

CliniMed Ltd. is a company registered in England number 01646927. Registered office: Cavell House, Knaves Beech Way, Loudwater, High Wycombe, Bucks, HP10 9QY. Tel: 01628 850100 Fax 01628 527312 Email: enquiries@clinimed.co.uk or visit www.clinimed.co.uk. CliniMed® and CliniFix® are registered trademarks of CliniMed (Holdings) Ltd. ©CliniMed Ltd. 2013. CliniFix patent number: GB 2 448 517B  EP 1982743

Practice point

It is not normal to have bladder leakage — light or otherwise. In most cases, it is preventable and treatable. However, if ignored, urinary incontinence will worsen.
carry smoke residue inside on their clothes and hair, which can again trigger asthma symptoms (Asthma Symptoms, 2018).

**Asthma, Chronic Cough and Urinary Leakage**

Although asthma is a condition affecting the respiratory system, it can have other impacts which are not as obvious. For example, chronic coughing from conditions such as asthma contributes significantly to the risk of bladder leakage — also called stress urinary incontinence (SUI) — see below. The reason for this is essentially physiological, as it is the result of greater downward force on the bladder (caused by the sneeze or cough) than the closure force of the urinary sphincter. The same thing can happen when people laugh or exercise. When chronic coughing due to asthma, smoking or other lung conditions goes unchecked for a period of time, it can end up straining and weakening the pelvic floor muscles (Vann, 2011).

Although, in some cases, a chronic cough or asthma cannot be prevented, if smoking triggers the chronic cough (smoker’s cough) or asthma, giving up smoking can stop leakage (Vann, 2011).

**Urinary Incontinence**

Urinary incontinence (UI) usually fits into one of three groups of symptoms:

- Stress urinary incontinence (SUI) is involuntary leakage of urine on effort or exertion, or coughing and sneezing (McDermott, 2010). As said, SUI is common in patients with respiratory conditions such as bronchiectasis, asthma or chronic obstructive pulmonary disease (COPD), due to the constant coughing. In some cases, asthma or a chronic cough that lasts for many years can stretch the muscles of the pelvic floor (see below) and make tiny tears in the muscles. These tears may cause SUI (Oxford University Hospitals NHS Trust, 2013).
- Urge urinary incontinence is the involuntary leakage of urine accompanied by, or immediately after experiencing a sensation of urgency (a sudden desire to urinate that is difficult to delay).
- Mixed urinary incontinence is the involuntary leakage of urine associated with urge incontinence, as well as stress incontinence experienced with exertion, effort, sneezing and coughing.

**Pelvic Floor Muscles**

One of the most important things that can be done to help prevent SUI from happening is to strengthen the pelvic floor muscles. These are the sling-shaped muscles suspended from the tail bone (coccyx) to the pubic bone at the front and between the sitting bones. These muscles support the pelvic contents (bladder, uterus and back passage) and, most importantly, help close off the bladder and rectum.

Studies have consistently shown that pelvic floor exercises, when done correctly, stop and/or decrease the amount of leakage experienced while coughing, as they help to make the pelvic floor muscles stronger (NICE, 2015). However, coughing should not be avoided as this can lead to a build up of sputum in the lungs.

Initial management of SUI involves pelvic floor muscle training, neuromuscular stimulation (strengthening the muscles using a low level electrical current), biofeedback (using measuring devices to help train the muscles), vaginal cones (small weights), elevating devices and lifestyle advice, such as drinking adequately, avoiding constipation, losing weight, stopping smoking, eating adequate fibre, among others (NHS Choices, 2016).

However, community nurses need to be mindful that many people who live with UI do not tell their healthcare professionals due to embarrassment. As, in most cases, SUI can be treated or improved, it is important to encourage people to discuss any concerns so that available treatment options can be explored with them. If the problem remains untreated, it may get worse.

**Airway Clearance and Coughing**

As said, it is essential that patients with cough are able to clear their chest effectively to minimise the build up of infected respiratory secretions, and that urinary leakage does not interfere with the ability to do this. Controlled coughing and modifying airway clearance techniques may help to prevent or minimise leakage, and good posture during airway clearance is essential. Research shows that the muscles involved in coughing and control of the pelvic floor work best with the spine straight and in an upright position (Hodges et al, 2007; Sapsford et al, 2008; Claus et al, 2009). Physiotherapists can help select the best airway clearance technique and position for patients.

**Alternative Techniques**

The knack’ is a technique where the pelvic floor muscles are tightened and lifted before huffing or sneezing to protect against leakage. This needs to be performed correctly, lifting the muscles, not pushing downwards. Patients may need the help of a specialist continence physiotherapist to learn how to do this. It is suggested by specialist continence

---

### Practice point

When coughing, abdominal muscles contract strongly, increasing pressure on the bladder and pelvic floor, the muscles of which need to contract with every cough to prevent leakage — a process which usually happens automatically.

**Practice point**

When coughing, abdominal muscles contract strongly, increasing pressure on the bladder and pelvic floor, the muscles of which need to contract with every cough to prevent leakage — a process which usually happens automatically.

**Practice point**

Patients can learn to do Kegel exercises (also called ‘pelvic floor exercises’) with a physical therapist to help strengthen the pelvic floor muscles. These involve:

- Making sure that the bladder is empty and then sitting or lying down
- Tightening the pelvic floor muscles and holding tight, counting to eight
- Relaxing the muscles and counting to 10.

This should be repeated 10 times, three times a day.
PATIENT STORY

Claudia (name changed for confidentiality) presented at the author’s continence advisory service with a difficult/severe asthmatic cough.

Over the last 10 years she has progressively developed urinary incontinence. Initially, this started with mild leaks only during acute attacks, but with time has become a major issue during attacks and she also has leakage problems during milder asthma flare-ups. She went around four years without any acute exacerbations, but in the past year things have deteriorated. She was now on her fourth course of steroids for the year and had been admitted to hospital three times — seven nights just before Christmas, treated in resuscitation and ITU on call/standby for 24 hours, but was fortunately not taken up. The asthma attacks have had a huge impact on her continence, as her pelvic floor muscles have been weakened by persistent cough.

Before Christmas, she was using incontinence pads for almost a month both during the day and at night, and when she became really poorly required bed pads (i.e. a mattress topper or under pad, which are designed to lie over a mattress and made primarily from foam to provide a layer of comfort and warmth between the individual and mattress), and three or four changes of nightwear throughout the night due to leakage. Since then, she has been having leakage several times a day and accidents at least once a week.

She is 25 years old with no children. Understandably, she is finding this upsetting. It is making her paranoid and having a knock-on effect, such as a thrush rash on her thighs, urinary tract infection (UTI) symptoms, etc — none of which are being helped by the 4.5 stone she has gained in weight in the last year, mostly due to prednisolone.

She had her first continence advisory service appointment almost six months after her original referral. She was not sure what to expect and wondered if she was making a ‘big deal’ over nothing. However, it turned out that things were quite bad. The intensity of coughing meant that she no longer had any control over her pelvic floor, other than making it twitch. At her initial visit, it was found that she had no ability to hold — the usual patient at the clinic would be able to hold for about three seconds before losing power. She was given exercises to do and advised that it could be three months before she would see any improvement.

She came away from the initial consultation feeling both better and worse. Better that she was not being silly, making a fuss over nothing and was going to get help, but also upset by just how bad things were. The nurse was genuinely shocked at both how long this had been going on and how little strength she had. This is usually a problem for women who have had children or later in life, not mid-20s pre-children. If it is this bad now and her asthma is deteriorating....? Claudia also said that she had a gut feeling that she was going to end up needing an operation in the future.

Claudia was desperate to be told that she was not alone, as this was not the sort of thing she could talk to her friends about — who wants to admit that they have continence issues at 25? She wondered if there was anyone out there going through similar problems because of their asthma. Not only was she troubled by urinary incontinence, but her asthma had an impact on her quality of life. For example, steroids affected her energy levels, but when she comes off them she coughs and has steroid withdrawal causing her to relapse. In addition, asthma blocks the airways of the lungs leading to a lower oxygen supply in the bloodstream. This hypoxic condition can make many individuals with asthma chronically fatigued, making exercise and many other daily activities difficult, although many asthma medicines have stimulant properties to help counteract side-effects.

However, with time, persistent exercising her pelvic floor muscles, use of neuromusculature therapy (low level electricity current to strengthen the pelvic floor muscles), and lifestyle changes, Claudia’s urinary incontinence will stop. She was advised to clear her chest effectively to reduce build-up of infected respiratory secretions, as it is important that her urinary leakage does not interfere with her ability to do this. She was also taught how to do control coughing and modify her airway clearance technique to help prevent and reduce urinary leakage. According to research, good posture during airway clearance is essential, as the muscles involved in coughing and control of the pelvic floor work best with a straight spine, in an upright position. Claudia was also taught ‘the knack’ — a technique where the pelvic floor muscles are lifted and tightened before coughing, huffing or sneezing to protect against leakage.
Continence care

physiotherapists that all patients with bronchiectasis practice ‘the knack’, whether they have UI or not.

Exercise
Exercise is important to maintain fitness and helps to keep the chest clear of secretions. High impact exercise such as jumping, skipping and running may cause leakage. Extra care should be taken with these activities during and after puberty, as risk of leakage may increase at this time. Patients who wish to exercise on a trampoline, should be advised to jog, rather than jumping, as this will cause less strain on the pelvic floor muscles. It is also important that they talk to a physiotherapist if they intend to do weight training and abdominal toning (sit ups) programmes, to ensure that they are following a balanced exercise programme, even if they do not leak.

Conclusion
Discussing any problems with a physiotherapist or respiratory nurse specialist, good posture, pelvic floor exercises and practising the ‘knack’ may help to control the symptoms of UI in patients with respiratory disease. Effective sputum clearance is important and individuals may find pads useful to contain leakage during airway clearance and coughing. However, it is important to use pads specially designed for urinary leakage. If leakage persists despite these measures, continence specialists are available to provide advice, assessment and treatment of leakage and patients can be referred to these teams via their community nurse, GP, or respiratory team.

References

Asthma UK (2015) Your asthma action plan. Available online: www.asthma.org.uk/advice/manage-your-asthma-action-plan/


NHS Choices (2016) Asthma. Available online at: www.nhs.uk/conditions/asthma


® 2018, Vol 32, No 1