GUIDELINES

Management of urinary incontinence in women: summary of updated NICE guidance

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This is one of a series of *BMJ* summaries of new guidelines based on the best available evidence; they highlight important recommendations for clinical practice, especially where uncertainty or controversy exists.

Further information about the guidance, a list of members of the guideline development group, and the supporting evidence statements are in the full version on bmj.com.

Urinary incontinence has substantial implications for the individual and family and has considerable resource implications for the health service. Monthly data in the UK show that 46% of women attending a primary care clinic report having urinary incontinence.[1] Women with urinary incontinence can present with either stress urinary incontinence, urgency urinary incontinence, or mixed urinary incontinence (see box for definitions), each of which has a different care pathway based on the predominant symptom. As new treatments (such as botulinum toxin A and surgical tapes for mid-urethral procedures) have become available, and as new variations periodically arrive on the market, updated guidance is needed to reflect these changes.

This article summarises the most recent recommendations from the National Institute for Health and Care Excellence (NICE) on the care for women with urinary incontinence,[2] and replaces previous NICE clinical guideline 40 (published October 2006).

Recommendations

NICE recommendations are based on systematic reviews of the best available evidence and explicit consideration of cost effectiveness. When minimal evidence is available, recommendations are based on the Guideline Development Group's experience and opinion of what constitutes good practice. Evidence levels for the recommendations are in the full version of this article on bmj.com.

Recommendations are marked to indicate the year of the last evidence review: "Reviewed 2006" if the evidence has not been reviewed since the original guideline; "Reviewed 2006, amended 2013" if the evidence has not been reviewed but an essential change has been made that affects the meaning of the recommendation; "Reviewed 2013" if the evidence was reviewed in 2013 but no change was made to the recommendation; "New 2013" if the evidence was reviewed in 2013 and the recommendation was updated or added.

History taking and physical examination

- At the initial clinical assessment, categorise the woman's urinary incontinence as stress urinary incontinence, mixed urinary incontinence, or urgency urinary incontinence (overactive bladder). Start initial treatment on this basis. In mixed urinary incontinence, direct treatment towards the predominant symptom. (Reviewed 2006.)
- If stress incontinence is the predominant symptom in mixed urinary incontinence, discuss with the woman the benefit of conservative management, including drugs for overactive bladder, before offering surgery. (New 2013.)

Assessment of pelvic floor muscles

- In all women with urinary incontinence undertake routine digital assessment to confirm pelvic floor muscle contraction before the use of supervised pelvic floor muscle training for the treatment of urinary incontinence. (Reviewed 2006, amended 2013.)

Bladder diaries

- Use bladder diaries (to record fluid intake, voiding times and volumes, leakage episodes, pad use, and other information such as degree of urgency or incontinence) in the initial assessment of women with urinary incontinence or overactive bladder. Encourage women to complete a minimum of three days of the diary covering variations in their usual activities, such as both working and leisure days. (Reviewed 2006.)

Absorbent products, urinals, and toileting aids

- Absorbent products, hand held urinals, and toileting aids should not be considered as treatments for urinary incontinence. They should be used only as
  - A coping strategy pending definitive treatment
  - An adjunct to ongoing therapy
  - Long term management of urinary incontinence only after treatment options have been explored. (Reviewed 2006.)

Women who choose not to have further treatment

- If a woman chooses not to have further treatment for urinary incontinence

DEFINITIONS OF TERMS

Urinary incontinence is defined by the International Continence Society as "the complaint of any involuntary leakage of urine."[3] Urinary incontinence may occur as a result of various abnormalities of lower urinary tract function or as a result of other illnesses, which tend to cause leakage in different situations.

Stress urinary incontinence is involuntary urine leakage on effort or exertion or on sneezing or coughing

Urgency urinary incontinence is involuntary urine leakage accompanied or immediately preceded by urgency (a sudden compelling desire to urinate that is difficult to delay)

Mixed urinary incontinence is involuntary urine leakage associated with both urgency and exertion, effort, sneezing, or coughing.

Overactive bladder syndrome is defined as urgency that occurs with or without urge urinary incontinence and usually with frequency and nocturia. Overactive bladder that occurs with incontinence is known as "overactive bladder wet," while overactive bladder without incontinence is "overactive bladder dry." These combinations of symptoms are suggestive of the urodynamic finding of detrusor overactivity, but can be the result of other forms of urethrovesical dysfunction.

Percutaneous sacral nerve stimulation is defined as the stimulation of a sacral nerve by an implantable pulse generator, via an electrode placed through the corresponding sacral foramen.

Percutaneous posterior tibial nerve stimulation is defined as the stimulation of the posterior tibial nerve using a fine gauge needle and a surface electrode near the arch of the foot; both needle and electrode are connected to a low voltage stimulator.

Transcutaneous stimulation techniques have also been used on both the sacral nerve and posterior tibial nerve. In percutaneous stimulation, stimulation perforates the skin, whereas in transcutaneous stimulation, stimulation is to the skin surface only.

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- Acute kidney injury: summary of NICE guidance (*BMJ* 2013;347:f4930)
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- Diagnosis and management of chronic hepatitis B in children, young people, and adults: summary of NICE guidance (*BMJ* 2013;346:f3893)

  - Offer her advice about managing urinary symptoms
  - Explain that if she changes her mind at a later date she can book a review appointment to discuss past tests and interventions and reconsider her treatment options. (New 2013.)

Pelvic floor muscle training

- Offer a trial of supervised pelvic floor muscle training of at least three months' duration as first line treatment to women with stress or mixed urinary incontinence. (Reviewed 2006.)
- Pelvic floor muscle training programmes should comprise at least eight contractions performed three times a day. (Reviewed 2006.)
- Continue an exercise programme if pelvic floor muscle training is beneficial. (Reviewed 2006.)

Pharmacological treatment

For stress urinary incontinence

- Do not use duloxetine as a first line treatment for women with predominant stress urinary incontinence. Do not routinely offer duloxetine as a second line treatment for women with stress urinary incontinence, although it may be offered as second line therapy if women prefer pharmacological to surgical treatment or are not suitable for surgical treatment. If duloxetine is prescribed, counsel women about its adverse effects, such as nausea and fatigue. (Reviewed 2006.)

For overactive bladder; general principles

- When offering antimuscarinic drugs to treat overactive bladder always take account of
  - Coexisting conditions (such as poor bladder emptying)
  - Use of other drugs affecting the total anticholinergic load
  - Risk of adverse effects. (New 2013.)
- Before starting drug treatment, discuss with women
  - The likelihood of success and associated common adverse effects (such as dry mouth or constipation)
  - The frequency and route of administration
  - That some adverse effects such as dry mouth and constipation may indicate the treatment is starting to have an effect
  - That they may not see the full benefits until they have been taking the treatment for four weeks. (New 2013.)
- Prescribe the lowest recommended dose when starting a new drug for overactive bladder. (New 2013.)
- If this drug treatment is effective and well tolerated do not change the dose or drug. (New 2013.)

Choosing drugs

- Do not offer oxybutynin (immediate release) to frail older women (those with multiple comorbidities, functional impairments such as walking or dressing difficulties, or any degree of cognitive impairment) as this formulation crosses the blood brain barrier and can affect cognitive functioning. (New 2013.)
- Offer one of the following first to women with overactive bladder or mixed urinary incontinence
  - Oxybutynin (immediate release)
  - Tolterodine (immediate release)
  - Darifenacin (once daily preparation). (New 2013.)
- If the first treatment for overactive bladder or mixed urinary incontinence is not effective or well tolerated, offer another drug with the lowest acquisition cost. (New 2013.)
- Offer a transdermal overactive bladder drug to women unable to tolerate oral medication. (New 2013.)

Reviewing drug treatment

- Offer a face-to-face or telephone review four weeks after starting each new drug treatment for overactive bladder.
  - Ask the woman if she is satisfied with the treatment
  - If improvement is optimal, continue treatment
  - If there is no or suboptimal improvement or intolerable adverse effects, change the dose or try an alternative drug, and review again four weeks later. (New 2013.)
- Offer review before four weeks if the adverse events of drug treatment are intolerable. (New 2013.)
- Offer referral to secondary care if the woman does not want to try another drug but would like to consider further treatment. (New 2013.)
- Offer a further face-to-face or telephone review if a woman's condition stops responding optimally to treatment after an initial successful four week review. (New 2013.)
- Review women who remain on long term drug treatment for urinary incontinence or overactive bladder annually in primary care (or every six months for women aged over 75 years). (New 2013.)
- Offer referral to secondary care if drug treatment is not successful. (New 2013.)
- If the woman wishes to discuss options for further management (non-therapeutic interventions and invasive therapy) refer to multidisciplinary team and arrange urodynamic investigation to determine whether detrusor overactivity is present and responsible for her overactive bladder symptoms
  - If detrusor overactivity is present and responsible for the symptoms, offer invasive therapy
  - If detrusor overactivity is present but the woman does not wish to have invasive therapy, offer advice as described in the section "Women who choose not to have further treatment"
  - If detrusor overactivity is not present refer back to the multidisciplinary team for further discussion about future management. (New 2013.)

The multidisciplinary team

- Inform any woman wishing to consider surgical treatment for urinary incontinence about
  - The benefits and risks of surgical and non-surgical options
  - Their provisional treatment plan
  - Include consideration of the woman's wishes about child bearing in the counselling. (Reviewed 2006, amended 2013.)
- Offer invasive therapy for overactive bladder or stress urinary incontinence symptoms only after a multidisciplinary team review. (New 2013.)

- When recommending optimal management the multidisciplinary team should take into account
  - The woman's preference
  - Past management
  - Comorbidities
  - Treatment options (including further conservative management such as drug therapy for overactive bladder). (New 2013.)
- The multidisciplinary team for urinary incontinence should include
  - A urogynaecologist
  - A urologist with a subspecialist interest in female urology
  - A specialist nurse
  - A specialist physiotherapist
  - A colorectal surgeon with a subspecialist interest in functional bowel problems, for women with coexisting bowel problems
  - A member of the care of the elderly team or occupational therapist, for women with functional impairment. (New 2013.)
- Inform the woman of the outcome of the multidisciplinary team review if it alters the provisional treatment plan. (New 2013.)
- All multidisciplinary teams should work within an established regional clinical network to ensure all women are offered the appropriate treatment options and high quality care. (New 2013.)

Invasive therapy for overactive bladder

Botulinum toxin A

At the time of publication (September 2013), botulinum toxin type A did not have a UK marketing authorisation for this indication, and evidence was only available for the botulinum toxin A (BOTOX, Allergan) preparation (also known as onabotulinum toxin A). Prescribers should follow relevant professional guidance, taking full responsibility for the decision, and obtain and document informed consent.

- After a multidisciplinary team review, offer bladder wall injection with botulinum toxin A to women with overactive bladder caused by proved detrusor overactivity that has not responded to conservative management (including drug treatment). (New 2013.)
- Discuss the risks and benefits of treatment with botulinum toxin A with women before seeking informed consent, covering
  - The likelihood of being symptom free or having a large reduction in symptoms
  - The risk of clean intermittent catheterisation being needed for variable lengths of time after the effect of the injections has worn off
  - The absence of evidence on duration of effect between treatments and on the long term efficacy and risks
  - The risk of adverse effects, including an increased risk of urinary tract infection. (New 2013.)
- Start treatment with botulinum toxin A only if women
  - Have been trained in clean intermittent catheterisation and have performed the technique successfully
  - Are able and willing to perform clean intermittent catheterisation on a regular basis for as long as needed. (New 2013.)
- If the first botulinum toxin A treatment has no effect, discuss with the multidisciplinary team. (New 2013.)
- If botulinum toxin A treatment is effective, offer follow-up at six months, or sooner if symptoms return, for repeat treatment without multidisciplinary team referral. (New 2013.)
- Tell women how to self refer for prompt specialist review if symptoms return after a botulinum toxin A procedure. Offer repeat treatment as necessary. (New 2013.)

Percutaneous sacral nerve stimulation

- Offer this procedure to women after multidisciplinary team review if:
  - Their overactive bladder has not responded to conservative management, including drugs
  - They are unable to perform clean intermittent catheterisation. (New 2013.)
- Consider this procedure after multidisciplinary team review if a woman's overactive bladder has not responded to conservative management (including drugs) and botulinum toxin A. (New 2013.)
- Discuss the long term implications of percutaneous sacral nerve stimulation with women, including
  - The need for test stimulation and probability of the test's success
  - The risk of failure
  - The long term commitment
  - The need for surgical revision (for example, if the lead migrates)
  - The adverse effects (for example, pain at implant site). (New 2013.)

Percutaneous posterior tibial nerve stimulation

- Do not offer percutaneous posterior tibial nerve stimulation for overactive bladder unless
  - There has been a multidisciplinary team review
  - Conservative management (including drugs) has not worked adequately, and the woman does not want botulinum toxin A or percutaneous sacral nerve stimulation. (New 2013.)

Surgical approaches for stress urinary incontinence

- When offering a surgical procedure discuss with the woman the risks and benefits of the different treatment options (such as use of mid-urethral tape or open colposuspension), using the information in the full guidance. (New 2013.)

Overcoming barriers

The guideline does not alter the recommendation to use immediate release oxybutynin as first line drug treatment for overactive bladder. Although this was not well received by healthcare professionals,[4] the evidence clearly confirms that if women are able to tolerate this drug, then it is by far the most effective in terms of continence status (zero episodes per day) and is the most cost effective, thereby freeing up resources for other treatments.[2] However, the GDG were mindful of the 2006 recommendation, and the poor compliance reported with patients taking drugs for overactive bladder,[5] and have thus nominated another two drug options for first line treatment, one of which is a once a day preparation.

It was hypothesised that this change will improve clinical and patient choice.

Although current practice is to try up to four or five antimuscarinic drugs in sequence, the new recommendation indicates a further investigation using urodynamic testing and a referral to a multidisciplinary team sooner (nominally after two drugs are unsuccessful). The revision of the treatment pathway aims to improve outcomes by offering treatments that are known to be effective, such as botulinum toxin A, when they are appropriate.

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A PATIENT'S JOURNEY

Left atrial myxoma

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This is one of a series of occasional articles by patients about their experiences that offer lessons to doctors.

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Previous articles in this series
- The missing vital sign (*BMJ* 2013;347:f4163)
- Spinal injury (*BMJ* 2013;346:f3374)
- Post-traumatic stress disorder after intensive care (*BMJ* 2013;346:f3232)
- Lessons from patients' journeys (*BMJ* 2013;346:f1988)
- Klinefelter's syndrome—a diagnosis mislaid for 46 years (*BMJ* 2012;345:e6938)

Susie Layton was 60 when she noticed increasing breathlessness, fatigue, and chest pain. A left atrial myxoma was subsequently excised. She was discharged home after five days, which she believes was too early

I was a seemingly healthy 60 year old working as a part time frame conservator. About three months before my diagnosis, I noticed being short of breath, particularly when using the stairs and climbing hills with my dog. I also experienced dizziness; felt generally tired, which I put down to ageing; had occasional night cramps; and saw "stars" when bending; and I once collapsed at a supermarket. In addition, I was referred to an ear, nose, and throat surgeon in January 2011 for vocal cord weakness, as I was constantly clearing my throat especially when speaking on the telephone. A magnetic resonance imaging scan of my brain revealed nothing abnormal.

The week before my diagnosis I noticed increasing tiredness together with a dull ache on the left side of my chest. The day before I consulted my doctor I was walking on the flat with a friend. She persuaded me to seek help because she was concerned that my breathlessness was not caused by my asthma but possibly by my heart.

Diagnosis, waiting time, and results

My doctor arranged for a series of blood tests and electrocardiography to be carried out the same day at the surgery. He subsequently told me that he had called an ambulance as there were gross irregularities on the electrocardiogram and that he suspected ischaemic heart disease. I remember thinking he must be over-reacting because my chest pains were not that intense and I was shocked by his decision to call an ambulance. I was taken to the Royal Devon and Exeter Hospital, where I had further blood tests, was interviewed by a doctor, and had chest radiography.

I was then transferred to a ward where the admitting consultant told me that all the test results were negative, but that he would request an urgent echocardiography for suspected cardiomyopathy. I was then discharged and told to wait for an outpatient appointment. The shortness of breath became increasingly worse and I found myself resting most afternoons. At this point I realised there was something very wrong, since prescribed diuretics were making no difference to the symptoms. After a few days I received a phone call giving me an appointment for echocardiography. I was seen within the week.

The feelings I experienced on the day of this diagnostic test were ones of fear but anticipation that I would be given an accurate diagnosis. I remember the technician's face when she said, "We can now give you a clear diagnosis for your shortness of breath." The relief I felt was enormous. I was dreading the confirmation of cardiomyopathy, never thinking what was next to come.

The cardiology registrar confirmed I had a "mass" in the left atrium called a myxoma, which would need to be excised at the cardiothoracic centre in Plymouth. He told me that I would be admitted immediately for a few more tests before transfer.

While awaiting transfer, many thoughts entered my mind, one of which was why did I leave this so long before doing anything about the symptoms? I realise in hindsight that I was petrified this was a condition that was never going to get better, so I pretended that it was not there. The surgery was going to involve extensive surgical intervention, cardiopulmonary bypass, collapsing of the lungs, a potential blood transfusion, a long recovery, and a fair bit of pain. Never once did I consider I would not recover.

That night I was taken to the coronary care unit at the cardiothoracic centre. I recall the ear piercing noise of the monitors all night long. A nurse supervised me, two doctors took long medical histories, and finally an anaesthetist arrived.

Surgery and recovery

The following day the cardiothoracic surgeon saw me. He explained his proposed course of action and that he would phone my husband when the operation was over.

CLINICIAN'S PERSPECTIVE

Cardiac myxoma is the most common benign primary cardiac tumour. It usually develops in the left atrium (75%) and less commonly in the right (15-20%), typically attached to the interatrial septum. Ventricular myxomas are rare and those that involve the heart valves are even rarer (accounting for <1%). A few cases present as the Carney complex, characterised by myxomas, hyperpigmented skin, and extracardiac tumours. Presentation varies depending on the size, location, and mobility of the tumour. Some tumours produce no symptoms, whereas non-specific constitutional symptoms of fever, fatigue, arthralgia, myalgia, and weight loss make the diagnosis difficult. Mrs Layton presented after developing symptoms of intracardiac flow obstruction (dyspnoea and presyncope) as the tumour grew and intermittently occluded the mitral valve during diastole.

Myoxmas can occur at any age but typically present between 30 and 60 years and are twice as common in women as in men. They represent an embolic risk in 30-40% of cases, most usually systemic embolism (as most are located in the left atrium). The risk of embolism is independent of size, as small tumours may be composed of extremely friable tissue. Sudden cardiac death may result from either complete obstruction of the mitral valve orifice or myocardial infarction resulting from coronary artery emboli.

Examination can reveal both diastolic and systolic murmurs, and in some a "tumour plop" may be audible as the mass passes through the atrioventricular valves. Electrocardiography is non-specific and echocardiography is the main imaging modality for diagnosis. Advanced imaging techniques such as tissue characterisation sequences with cardiac magnetic resonance imaging can be useful, and high spatial resolution of multidetector cardiac computed tomography allows identification of small tumours and calcium, which may point towards a diagnosis.

Mrs Layton describes the relief in receiving a clear diagnosis, followed by the daunting prospect of major cardiac surgery. She was rapidly transferred to a cardiac surgical centre and underwent surgery within 48 hours, which gave her and her husband little time to psychologically prepare for the risk involved or the immense task ahead. Urgent surgical referral and intervention was essential owing to the continued risk of embolism and sudden cardiac death. Cardiac surgery for atrial myxoma is the treatment of choice, with low surgical mortality, good long term outcome measures, and an extremely low recurrence rate. Survivors return to their preoperative level of daily activity usually within a short period of surgery.

The postoperative period is a difficult challenge for both patients and their families and carers. There is a role for cardiac rehabilitation which is well established after myocardial infarction, coronary artery bypass grafting, and percutaneous coronary intervention, although this ought to be extended to all undergoing non-coronary cardiac surgery. Patients benefit from referral to the cardiac rehabilitation team before surgical intervention, helping them to adjust to their situation and psychological state. Cardiac rehabilitation reduces mortality, myocardial infarction, and readmission rates and improves functional capacity and perceived quality of life. Furthermore, it allows seamless integration with the primary care teams.

David P Ripley

USEFUL RESOURCES FOR PATIENTS AND HEALTH PROFESSIONALS

British Heart Foundation (www.bhf.org.uk)—contains an information leaflet on atrial myxoma

British Association for Cardiovascular Prevention and Rehabilitation (www.bacpr.com)—a multidisciplinary body representing and serving the interests of professionals involved in cardiac rehabilitation

The next few days after surgery were difficult because of the pain, disorientation, and discomfort of being hooked up to drains. I was transferred to a ward from where my recovery was reasonably fast. Throughout my stay I felt great admiration for my carers but was aware of the huge pressure they were under and the need to discharge quickly.

Care at home

After five days I was discharged home. My husband is in his 70s, has osteoarthritis, and found the prospect of caring for me daunting. I, on the other hand, was desperate to be at home, in my own bed, and trying to regain a sense of normality. It is a difficult balance—the sole carer trying to do the right thing and the patient keen to get back to "normal" as soon as possible. The recovery from open heart surgery was slow, painful, and sometimes depressing. I made myself type my own patient journey as a cathartic process almost as soon as I arrived home and sent it to family members and friends. The sense of shock and fear from them was palpable. Shock from the diagnosis and fear that I would not survive.

I do feel I was discharged too early. The move towards early discharge seems huge, which is fine when patients are supported and local hospitals have outreach, but in my case, with the exception of visits from the district nurse to monitor my anticoagulants (and that's only because I said I felt I could not attend the practice) there was no support. My husband did speak to my doctor about my discharge and the possibility of a period of admission to hospital to help with recuperation and was told that there was no infrastructure available.

As far as contact with health professionals was concerned this was very much at my request. My doctor did not visit me. However I telephoned him a couple of times to discuss better pain management. I attended the local surgery once at the beginning of my recovery for a check of my anticoagulation, but insisted a district nurse visited me at home because I truly felt too ill to make the effort required. I also did not want to be sitting in a car as the seat belt was far too painful across my healing sternum. As soon as I felt able to I did attend the surgery for my anticoagulants to be monitored.

My recovery has been reasonably unproblematic, although the discharge medication of paracetamol for pain management was not adequate, particularly given the major surgery I had undergone and that I had required a morphine pump on the ward. I was persuaded by my doctor to consider tramadol, which was indeed more effective. I was off all pain relief by nine weeks and any treatment by 12 weeks.

At the postoperative appointment at seven weeks the biopsy report showed a left atrial myxoma. The results of electrocardiography and chest radiography were normal. I required no follow up.

I realise how fortunate I am to have had a reasonably speedy diagnosis, which helped to save my life. Perhaps my general state of fitness and health was also a bonus, but with hindsight if I had waited much longer I fear the outcome would not have been so positive. I am now symptom-free and able to live my life without shortness of breath. I am now walking and climbing hills, and, while being careful and still tired, now consider my daily routine normal rather than a nightmare, unlike before surgery.

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