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A UK consensus on the management of the bladder in multiple sclerosis

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ABSTRACT

Bladder symptoms in multiple sclerosis (MS) are common and distressing but also highly amenable to treatment. A meeting of stakeholders involved in patients' continence care, including neurologists, urologists, primary care, MS nurses and nursing groups was recently convened to formulate a UK consensus for management. National Institute for Health and Clinical Excellence (NICE) criteria were used for producing recommendations based on a review of the literature and expert opinion. It was agreed that in the majority of cases, successful management could be based on a simple algorithm which includes using reagent sticks to test for urine infection and measurement of the post micturition residual urine volume. This is in contrast with published guidelines from other countries which recommend cystometry. Throughout the course of their disease, patients should be offered appropriate management options for treatment of incontinence, the mainstay of which is antimuscarinic medications, in combination, if necessary, with clean intermittent self-catheterisation. The evidence for other measures, including physiotherapy, alternative strategies aimed at improving bladder emptying, other medications and detrusor injections of botulinum toxin A was reviewed. The management of urinary tract infections as well as the bladder problems as part of severe disability were discussed and recommendations agreed.

BACKGROUND

Nature of the problem

Multiple sclerosis (MS) is the commonest progressive neurological disease affecting young people and there are thought to be some 85 000 with the disease in the UK.¹ Recent research suggests the proportion of women with MS is increasing, with a ratio of 3:1 women:men.² Epidemiological trends in the UK suggest a north-to-south gradient.³ There appears to be a regional variation in the prevalence of the disease, with between 100 and 120 per 100 000 in England⁴ and Wales,⁵ 180 in Scotland⁶ and over 220 in Orkney.⁷

MS is a chronic inflammatory demyelinating disorder affecting the central nervous system which has a tendency to progress, often leading to a decline in mobility and increasing disability due in part to spinal cord involvement. There is strong clinical evidence that lower urinary tract dysfunction is mainly the result of spinal cord disease and thus the several types of resulting bladder dysfunction are those known to result from disconnection between centres in the

brainstem, critical to neurological control, and the sacral part of the spinal cord. The various expected pathophysiologicals are shown in fig 1, which can result in a variable combination of symptoms.

Estimates of the proportion of patients with MS who have lower urinary tract symptoms vary according to the severity of the neurological disability in the group under study, but a value of about 75% is frequently cited.⁸ Although exceptions do occur, in most instances the severity of bladder symptoms and effective management options are in keeping with the patient's level of general disability. This is illustrated in fig 2.

A particular problem in MS is that neurological symptoms may deteriorate acutely when the patient has an infection and pyrexia. It therefore can be difficult to know whether an abrupt deterioration is due to a relapse of MS or the result of a rise in body temperature. As MS progresses it is not uncommon for recurrent infections, including those of the urinary tract, to result in deficits which accumulate and lead to progressive neurological deterioration.⁹

Social and economic consequences

The importance of this topic is recognised in the effect incontinence has on quality of life. Several studies have shown that urinary incontinence is considered to be one of the worst aspects of the disease, with 70% of a self-selected group of patients with MS responding to a questionnaire as classifying the impact bladder symptoms had on their life as "high" or "moderate".¹⁰ Effective treatments significantly enhance measures of quality of life.¹¹ However, the severity of symptoms may differ in the degree of distress and bother they cause: threatened urinary leakage in someone still ambulant may cause greater distress than regular episodes of incontinence in a permanent wheelchair user.

There is also a considerable cost associated with this aspect of patients' disability both in terms of additional nursing care and cost of containment of incontinence. Recurrent urinary tract infections in patients with MS may add to the cost of care both because of acute hospital admissions necessitated by an abrupt decline in neurological functioning and the ongoing cost of supporting increasing neurological disability.

Clearly effective measures for managing bladder complaints in patients with MS should be widely available throughout the UK and patients should be referred appropriately whatever their level of

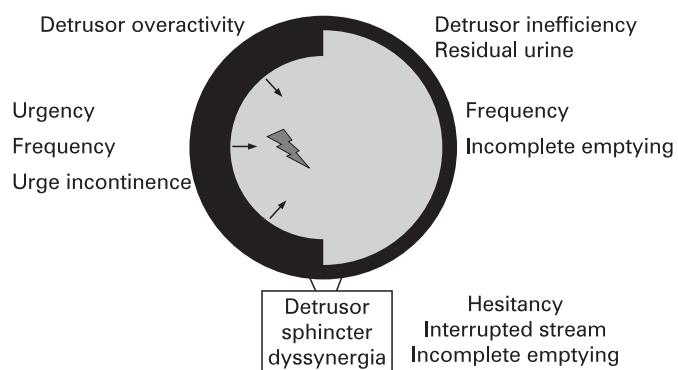


Figure 1 Schematic diagram of the bladder showing the pathophysiology of lower urinary tract dysfunction in multiple sclerosis and resulting symptoms.

disability. What is unknown is the regional variability in the infrastructure available for managing such problems but it seems likely that there are inconsistencies. Improvements in areas where care is poor could result in significant improvements in the standard of health for many.

CONSENSUS METHODOLOGY

With the aim of reaching a consensus on the optimal management of lower urinary tract dysfunction in MS, representatives from the British Association of Urological Surgeons, Association of British Neurologists, British Association of Urological Nurses, Association for Continence Advice, UK MS Specialist Nurse Association, Primary Care and the Royal College of Nursing were invited to a discussion meeting. The MS Trust represented the views of patients. Guidelines were prepared that would assist health care professionals with approaching, evaluating and managing patients of MS with lower urinary tract disease. In preparation, attendees were sent a list of titles of publications found by a search using the abstract and citation database "Scopus" for "MULTIPLE SCLEROSIS" [AND] "BLADDER" as well as relevant references from the UK MS Trust inhouse reading lists for bladder management, which had been compiled using PubMed. Levels of evidence and dependent grades of recommendation applied to the evaluation of literature were as

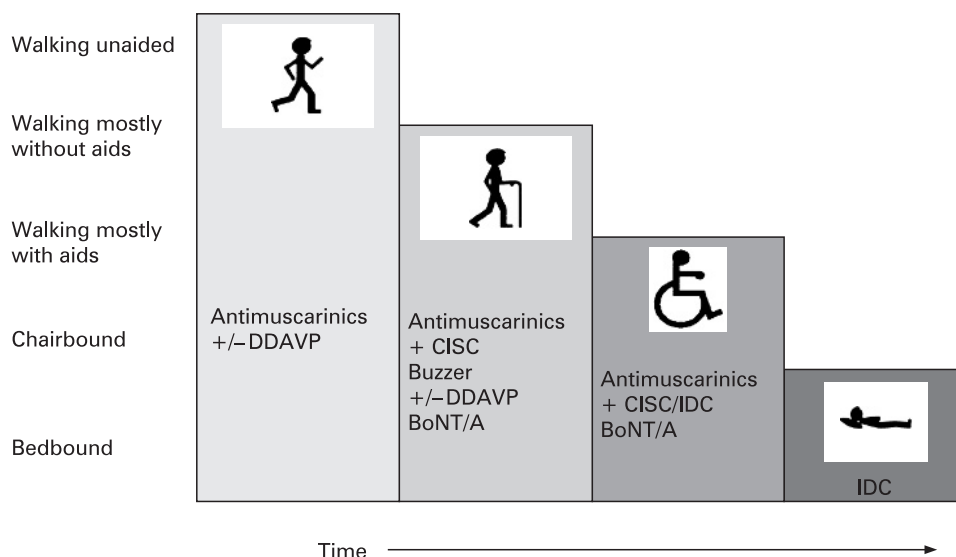
Table 1 Grading scheme and hierarchy of evidence used in this guideline

Recommendation grade	Evidence
A	Directly based on category I evidence
B	Directly based on: <ul style="list-style-type: none"> ▶ category II evidence or ▶ extrapolated recommendation from category I evidence
C	Directly based on: <ul style="list-style-type: none"> ▶ category III evidence or ▶ extrapolated recommendation from category I or II evidence
D	Directly based on: <ul style="list-style-type: none"> ▶ category IV evidence or ▶ extrapolated recommendation from category I, II or III evidence
Evidence category	Source
Ia	Evidence from meta-analysis of randomised controlled trials
Ib	Evidence from at least one randomised controlled trial
Iia	Evidence from at least one controlled study without randomisation
Iib	Evidence from at least one other type of quasi-experimental study
III	Evidence from non-experimental descriptive studies, such as comparative studies, correlation studies and case control studies
IV	Evidence from expert committee reports or opinions and/or clinical experience of respected authorities

used by the National Institute for Health and Clinical Excellence (NICE), adapted from Eccles and Mason, and are shown in table 1.¹²

Selected papers were sent in full prior to the meeting, and the literature relating to evidence of a high level (level Ia–IIb) or of particular relevance was systematically reviewed and presented there for discussion. Full consideration was given to the 2003 NICE guidelines on MS which included some recommendations for bladder management. Following the meeting, a draft was prepared which was subsequently refined by successive email iterations until a consensus document was agreed. At no stage in this process were there major dissensions.

Figure 2 Bladder management options with progression of disabilities (for details of treatments see text). BoNT/A, botulinum toxin A; "buzzer", suprapubic vibration device; CISC, clean intermittent self-catheterisation; DDAVP, desmopressin; IDC, indwelling catheter.



GENERAL APPROACH TO LOWER URINARY TRACT DYSFUNCTION IN MS

Problems may include storage (overactive bladder) symptoms such as daytime or night-time frequency, urgency of micturition, incontinence and/or symptoms of ineffective voiding such as difficulty in passing urine, poor stream and double voiding (fig 1), and both must be managed in order to optimise treatment. Investigations and management advice should be appropriate for the patient's current needs and level of disability.

Recommendation

- ▶ Each person with MS who complains of lower urinary tract symptoms should be assessed by a suitably trained health care professional who is knowledgeable about MS and its effects on lower urinary tract function. Patients should be periodically reviewed for new or changing lower urinary tract symptoms (grade D).

INVESTIGATIONS FOR PLANNING MANAGEMENT

Urine testing

Combined rapid tests of urine, "dipstick" test, using reagent strips for urinalysis, is advisable for all patients with MS presenting with new bladder symptoms (fig 3). Negative predictive value for excluding urinary tract infection (UTI) is excellent (>98%) but the positive predictive value for confirming UTI is only 50%.¹³ Haematuria should always be fully investigated (see NICE recommendations on improving outcomes in urological cancers)—all patients with visible haematuria and patients more than 50 years of age with microscopic haematuria should be referred for further investigation.

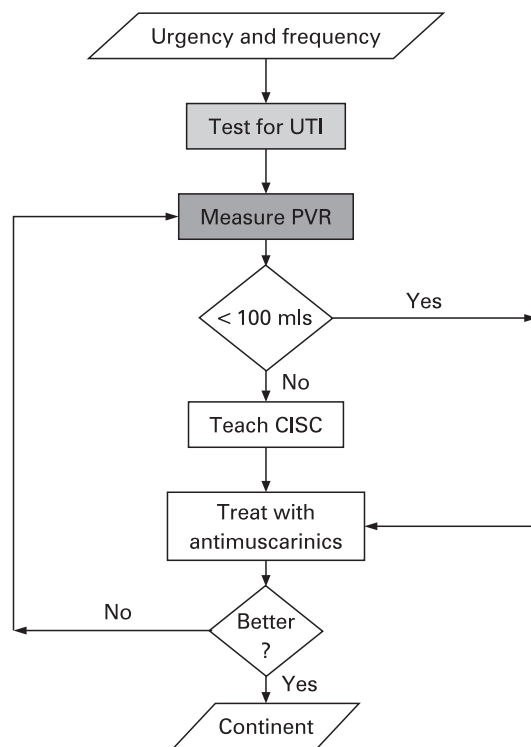


Figure 3 Management algorithm for patients with multiple sclerosis presenting with urinary tract symptoms. CISC, clean intermittent self-catheterisation; PVR, post void residual volume; UTI, urinary tract infection.

Measurement of the post micturition residual volume

The post micturition residual urine should be measured as part of the initial assessment and preferably before antimuscarinic treatment is started (see fig 3). Furthermore, if there is any reason to suspect a patient already established on treatment has developed incomplete emptying (either from history or from their failure to respond to antimuscarinics), or has had more than one confirmed or two suspected episodes of urinary tract infections in a period of 1 year, the post micturition residual volume should be measured by ultrasound or, alternatively, in-out catheterisation, if the equipment is not available.

In the majority of cases, this single investigation provides the necessary information on which to base effective management. Thus the recommended algorithm for management is shown in fig 3.

Urodynamics

"Urodynamics" (referring here to multichannel cystometry and pressure/flow studies of voiding), with or without additional synchronous fluoroscopic screening (video urodynamics), is used in neuro-urological practice in order to plan management of refractory symptoms or to identify patients at risk of future complications, particularly upper urinary tract problems. However, it should be noted that upper tract complications are much less common in patients with MS than in spinal cord injury. The reason for this is unknown and although urinary sepsis, stone formation and upper tract dilatation may occur, this is usually in the context of advanced disease (fig 2) and rarely as a clinically silent, isolated problem. Any patient with these complications is likely to have already been under the care of a urologist and may well have a long term indwelling catheter. Accordingly, as management is relatively unlikely to be influenced, the likely benefit of urodynamic studies does not invariably warrant the intrusive nature of the study and the risks associated.

Typically, urodynamics are undertaken in patients with refractory urinary urgency and incontinence who have not responded to the measures summarised in fig 3. However, a variety of other symptoms may need to be investigated using urodynamics. For example, some women with MS will complain of stress urinary incontinence; if surgical treatment is being considered, full urodynamic evaluation, ideally by videourodynamics, is necessary. This is because of the range of mechanisms potentially contributing to bladder dysfunction in women with MS, and the adverse outcome that can result if voiding difficulties are not identified prior to surgery.

Thus the use of urodynamics is appropriate only in certain situations where surgical or intravesical treatments are being planned. This is at variance with guidelines published by a French expert group who recommended urodynamic studies in all MS patients with symptomatic lower urinary tract disease.¹⁴ The UK expert panel was of consensus opinion that the management algorithm shown in fig 3 is generally applicable as a firstline management strategy.

Recommendations

- ▶ "Dipstick" testing of the urine should be undertaken in patients with new symptoms of bladder dysfunction (grade D).
- ▶ Measurement of the post micturition residual volume by abdominal ultrasound should be made in all patients with bladder symptoms prior to treatment or if there is reason to suspect that they have incomplete emptying (grade D).

- ▶ Urodynamic investigations with filling cystometry and pressure/flow studies of voiding should be carried out only in those who are refractory to conservative treatment or bothered by their symptoms and wish to undergo further interventions (grade D).

GENERAL MEASURES

Fluid intake

Inevitably, patients with overactive bladder symptoms tend to reduce their fluid intake but an intake of 1–2 litres a day is generally recommended. The amount should be individualised and assessment of fluid balance using a voiding diary is often helpful.¹⁵ Dehydration may exacerbate constipation.

Caffeine reduction below 100 mg/day has been shown to reduce symptoms of urgency and frequency although not specifically in patients with MS.¹⁶

Physical treatments

There are a number of therapeutic interventions which can be of benefit to patients with overactive bladder symptoms. These are physically based and the same treatments are often offered as alternatives to oral medication in patients with symptoms of bladder overactivity of non-neurological origin. Pelvic floor exercises are usually used to treat stress incontinence by encouraging strengthening of the pelvic floor. However, in the context of the overactive bladder, they can enhance the inhibitory effect of pelvic floor contraction on the detrusor. Bladder retraining involves the patient voluntarily “holding on” for increasingly longer periods, often an incremental programme supervised by specialist continence advisors or physiotherapists. Consequently, these interventions can only be expected to be effective in patients with intact neural pathways to pelvic floor muscles and an assessment of pelvic floor contractions should be made prior to initiating treatment. The exercises may be taught with or without biofeedback. “Neuromuscular stimulation” involves electrically stimulating pudendal afferents with an appropriately designed stimulator and it is thought that the resulting reflex pelvic floor contraction has the same inhibitory effect on detrusor activity as does a voluntary contraction of pelvic floor muscles.

There is level IIb evidence suggesting both these procedures may be effective and there is certainly no evidence that these can be harmful.^{17 18}

Recommendation

- ▶ Physical interventions such as pelvic floor exercises should be offered to patients with mild disability from MS (grade B).

Bowel emptying

A scientific basis for recommending treatment of coexistent constipation as a means of improving bladder function is lacking but anecdotally, many practitioners, and indeed their patients, feel this is important. The effect of antimuscarinics on exacerbating constipation has not been studied. Further research on the effect of improved bowel management on reduction in bladder symptoms would be valuable.

MANAGEMENT OF IMPAIRED VOIDING

Clean intermittent self-catheterisation

The expert panel considered clean intermittent self-catheterisation to be of the greatest importance in the management of patients with neurogenic bladder dysfunction caused by MS

although there is no formal evidence base for its use. Furthermore, it seems highly improbable that a placebo controlled trial of its effectiveness will ever be undertaken as the non-treatment of patients with a raised post micturition residual volume in a placebo arm would now be considered unethical.

Clean intermittent self-catheterisation should be recommended if a raised post micturition residual volume is demonstrated either by catheterisation or by ultrasound. The technique should be taught by a specialist nurse.¹⁹ A value of 100 ml is commonly taken as the amount of residual urine that contributes to bladder dysfunction (see fig 3) as bladder capacity is usually also reduced by overactivity of the detrusor. It is recognised that a single measurement of the post void residual volume is not representative and, when possible, a series of measurements should be made over the course of 1 or 2 weeks.

Recommendation

- ▶ Any patient with a persistent residual volume in excess of 100 ml should be offered the opportunity to learn clean intermittent self-catheterisation. This should be taught by a urology specialist nurse or continence advisor, either in an outpatient setting or in the patient’s home (grade D).

Other measures

α Blockers

Although a small study of patients with MS showed level IIb evidence that α blocker medication reduced post micturition residual volume,²⁰ experience in clinical practice does not show a significant effect of this medication. However, “diagnostic shadowing” should not be allowed to obscure the fact that men with symptoms of poor voiding may have outflow obstruction of prostatic origin. If so, they may benefit from a combination of α blockers and five α reductase inhibitors.²¹ These drugs can be given empirically but any decision to proceed to surgery should be preceded by videourodynamics.

Suprapubic vibration

There is level Ib evidence that supra pubic vibration (“buzzer”) can help initiate detrusor contractions and improve bladder emptying in those with incomplete bladder emptying and detrusor overactivity²² but its effect is limited.

Credé’s manoeuvre

Use of the Credé’s manoeuvre (application of non-forceful, smooth, even pressure from the umbilicus towards the pubis) is controversial in patients following spinal cord injury but is usually not encouraged.²³ Nothing is known about the possible long term risks of using this in patients with MS.

Long term catheterisation

If clean intermittent self-catheterisation is no longer possible, a long term indwelling catheter should be offered and this should be a suprapubic rather than a urethral one, in view of the significant risk of progressive urethral damage which is a condition that is regularly seen in MS patients who are managed by indwelling urethral catheters. Choice of the type of catheter may determine the incidence of urinary tract infections and consideration should be given to the individual’s propensity to develop catheter blockage and encrustation. NICE has issued guidelines regarding insertion and maintenance of catheters.^{24 25} There is evidence emerging that botulinum toxin may benefit patients of advanced MS with urethral leakage of

Table 2 Antimuscarinics available in the UK

Generic name	Trade name	Dose (mg)	Frequency	Receptor subtype selectivity	Molecule type	Active metabolite	Elimination half-life of drug (h)
Propantheline	Pro-Banthine	15	tds	Non-selective	Quaternary amine	No	<2
Tolterodine tartrate	Detrusitol	2	bd	Non-selective	Tertiary amine	Yes	2.4
Tolterodine tartrate	Detrusitol XL	4	od	Non-selective	Tertiary amine	Yes	8.4
Trospium chloride	Regurin	20	bd	Non-selective	Quaternary amine	No	20
Oxybutynin chloride	Ditropan	2.5–5	bd - qds	Non-selective	Tertiary amine	Yes	2.3
Oxybutynin chloride XL	Lyrinel XL	5–30	od	Non-selective	Tertiary amine (R and S isomers)	Yes	13.2
Propiverine hydrochloride	Detrunorm	15	od - qds	Non-selective	Ester	Yes	4.1
Darifenacin	Emselex	7.5–15	od	Selective muscarinic M3 receptor antagonist	Tertiary amine	Yes	3.1
Solifenacin	Vesicare	5–10	od	Selective muscarinic M2 and M3 receptor antagonist	Tertiary amine	Yes	40–68
Fesoterodine	Toviaz	4–8	od	Non-selective	Tertiary amine	Yes	7

bd, twice daily; od, once daily; qds, four times daily; tds, three times daily; XL, extended life.

urine (catheter bypassing).²⁶ Consideration should always be given to the option of using intermittent bladder drainage using a catheter valve as opposed to continuous drainage into a leg bag. The applicability of catheter valve usage will vary between patients as effective use is dependent on establishing a lower urinary tract that has reasonable urine storage function.

MANAGEMENT OF OVERACTIVE BLADDER SYMPTOMS

Antimuscarinic medications

There are several antimuscarinic medications available in the market (table 2) and they serve as the mainstay of treatment of detrusor overactivity, whatever the cause.

There is a clinical impression that they are particularly effective in neurogenic detrusor overactivity but the data do not exist to allow comparison of effectiveness in patients with MS to be made against those with idiopathic detrusor overactivity.

There are a small number of studies which provide level Ib evidence for the efficacy of antimuscarinics in reducing incontinence, frequency and urgency in MS.^{27–28} Dual therapy (between combinations of oxybutynin, tolterodine and trospium) has been shown to be effective and well tolerated in a few patients.²⁹ However, not all the antimuscarinics currently available have been systematically investigated in this way, and their use is often by inference of efficacy.

Often it is a combination of clean interment self-catheterisation and oral antimuscarinics that is most effective. In the presence of raised post micturition residual volume, detrusor contractions will continue despite the use of antimuscarinics (fig 1). Consequently, antimuscarinics may exacerbate the situation by further impairing the efficiency of bladder emptying; it is for this reason that the algorithm shown in fig 3 is recommended. The post micturition residual volume should be rechecked in patients who have not responded to antimuscarinics.

In the cognitively impaired, antimuscarinics should be prescribed with a warning for carers to be vigilant about possible deterioration in memory³⁰ or the onset of confusion. In the absence of positive evidence it seems sensible at this time to recommend the use of antimuscarinics which do not cross the blood–brain barrier (ie, trospium chloride) or which selectively block the M3 receptor (ie, darifenacin) which is not known to be involved in cognition.

There is level Ib evidence to suggest that intravesical atropine is effective in reducing detrusor overactivity.³¹ However,

instillation is time consuming and may be difficult for patients with poor manual dexterity. Intravesical oxybutynin has also been shown to be effective in patients with spinal cord damage, including MS.³²

Detrusor injection of botulinum toxin A

There is now level Ib evidence for the use of detrusor injections of botulinum toxin A (BoNT-A) (either “Botox”—Allergan 300 mU or “Dysport”—Ipsen 500 U) to treat severe neurogenic detrusor overactivity.^{33–34} The number of patients with MS in both placebo controlled studies was small but there is additional level III evidence to suggest that BoNT-A injections into the detrusor muscle in patients with MS is highly efficacious in improving symptoms, urodynamic parameters and quality of life.¹¹ That study also demonstrated that almost all patients (42 out of 43) receiving this treatment needed to do clean intermittent self-catheterisation afterwards, in contrast with observations in patients with non-neurogenic detrusor overactivity. Encouraging evidence is emerging that this treatment may benefit patients with an indwelling urethral catheter and leakage of urine (catheter bypassing),²⁶ and it may also reduce the frequency of urinary tract infections³⁵ as well as improve quality of life.¹¹ However, at the time of writing, BoNT-A for treatment of detrusor overactivity is unlicensed and it is unlikely to receive regulatory approval in Europe before 2011–2012. This means that its use should only be undertaken following compliance with national and local regulations. If the treatment is part of a research protocol, UK Medicines and Healthcare Products Regulatory Agency (MHRA) regulations covering the use of an investigational medicinal product in clinical trials should be adhered to, with the formal identification of a legal sponsor. If the medication is not being used as part of a research study, the clinician must have obtained agreement from their local Trust, often from a “Use of Medicines Committee” and arrangements made for proper clinical governance and auditing outcomes.

Other measures

Desmopressin

There is level Ia evidence for the use of desmopressin (DDAVP 100–400 µg orally or 10–40 µg intranasally) for the treatment of daytime frequency or nocturia in MS.³⁶ However, it should be prescribed with caution (see NICE guidelines on female incontinence, 2007) and not be used more than once in 24 h.

Cannabinoids

Although there is level Ib evidence for the efficacy of cannabinoids based medicines in the treatment of lower urinary tract symptoms in MS,³⁷ there is no licensed form of this medication currently available in the UK.

Intravesical vanilloids

There is level Ib evidence to suggest that intravesical capsaicin significantly improves clinical and urodynamic parameters of detrusor overactivity in patients with spinal cord damage, including MS.³⁸ Resiniferatoxin, a capsaicin analogue, has also been shown to improve urodynamic parameters and incontinence, and appears promising³⁹ but is currently not licensed.

Diuretics

No specific data for patients with MS exist but patients with nocturnal polyuria (ie, more than one-third of the 24 h urine output overnight) have been shown to have a reduction in night-time frequency if given an afternoon diuretic in a standard dosage.⁴⁰ This is particularly effective in patients with dependent oedema.

Hyperbaric oxygen

Although initial studies showed some improvement in bladder control following exposure to hyperbaric oxygen,⁴¹ subsequent follow-up found these improvements were not sustained.⁴²

Recommendations

- ▶ The use of antimuscarinics is recommended but only after the post void residue has been checked if there is any reason to suspect the patient has incomplete bladder emptying (grade A).
- ▶ There is level I evidence that botulinum toxin A should be recommended in patients with MS with detrusor overactivity who have failed to respond to oral antimuscarinics, and who are willing to perform clean intermittent self-catheterisation. However, this treatment is currently unlicensed and local approval must be obtained (grade A).

SURGICAL TREATMENTS

Sacral neuromodulation

Sacral nerve neuromodulation has been tried in a very small number of patients with MS (13 in Europe and 13 in the USA) with some success.⁴³⁻⁴⁵ In rare cases, where the MS appears to have a benign indolent course and bladder symptoms from neurogenic detrusor overactivity are problematic and not responsive to less invasive treatments, neuromodulation may be an option; however, nowadays, BoNT-A would probably be considered first.

Other surgery

There is no evidence that patients with MS will suffer neurological deterioration following bladder surgery. NICE (2003) concluded that, where surgery is offered, it should be carried out in centres which regularly undertake anaesthesia and surgery on MS patients. Patients who need surgery should be encouraged to go ahead.

Women with MS may suffer from stress urinary incontinence just like neurologically normal women. They should be offered surgical treatment for this problem.

The need for surgical intervention for intractable urge incontinence appears to have diminished since the advent of botulinum toxin treatment. However, a proportion of patients

will prove still to have intractable urge incontinence and may benefit from surgery. The options include bladder augmentation surgery and urinary diversion. Although there is a good deal of literature relating to these techniques, it is unusual for MS patients to be singled out for separate analysis in the reporting of results. Patients will require very careful preoperative counselling.

Occasional patients who have been managed with long term catheters become catheter intolerant with frequent catheter blockages, recurrent urinary tract infections, systemic sepsis or frequent peri-catheter leakage. Some of these patients may benefit from urinary diversion. Catheter induced trauma to the urethral sphincter mechanism may result in urethral erosion and may require surgery to treat stress incontinence. When this is severe, standard treatments for stress incontinence may be ineffective. In such cases, a formal urethral closure can be undertaken, usually with bladder drainage via a suprapubic catheter. Urethral closure can be achieved through a suprapubic or vaginal approach in women or by a suprapubic or perineal approach in men. However, there is no clear evidence to support one approach over another.

The alternative to urethral closure is an ileal conduit procedure which allows for ease of practical management of urinary incontinence because bags are easily changed by patient or carer. This procedure may be complicated by recurrent pyocystitis in the long term and consideration should be given to simultaneous removal of the bladder (simple cystectomy) or formation of a vesico-vaginal fistula (vaginocystostomy; Spence procedure) to facilitate bladder drainage.

Recommendation

- ▶ Active treatment of bladder problems in all patients with MS, irrespective of the severity of their underlying neurological disease, should be undertaken by the appropriate specialist (grade D).

APPLIANCES AND EQUIPMENT

A range of penile sheaths and disposable body worn pads may be helpful for containing incontinence. Men should be assessed by an appropriately trained practitioner and fitted with external drainage systems if needed and be reviewed on an annual basis, or sooner if clinically indicated.

When appropriate, and only after full clinical assessment, re-useable products such as pants and bed pads should also be offered. Although financial restrictions may mean there is a fixed quota for the number of disposable pads, the provider should be willing to increase the supply if clinically indicated. Ongoing supplies of products should be organised, utilising home delivery services wherever possible.

Patients may also require access to the full range of toileting equipment available such as hand held urinals (both male and female can now be issued via a prescription), aids and portable bidets, etc. They should also have access to a range of catheter accessories, including supportive devices, bags specially designed for wheelchair users and, if appropriate, catheter valves.

MANAGEMENT OF INFECTIONS

There is level Ib evidence to suggest that cranberry extract tablets may reduce the likelihood of infections in patients with neurogenic bladder⁴⁶ although not specifically in MS. Level I evidence suggests that there is no role for prophylactic antibiotics in patients with uncomplicated spinal cord dysfunction.⁴⁷ Infections in patients with MS, including UTI, may lead

to exacerbation of neurological symptoms. This means that arrangements for treatment of confirmed UTI must be prompt and timely. Patients with recurrent proven urinary tract infections should be investigated by ultrasound and cystoscopy to check for any underlying predisposing abnormalities. If no cause is identified, and the patient's technique for clean intermittent self-catheterisation cannot be improved, it is reasonable to start a prophylactic course of low dose antibiotics.

Bacteriuria in the absence of symptoms in patients on clean intermittent self-catheterisation or indwelling catheter is to be expected and is not an indication for antibiotics. The diagnosis of a urinary tract infection in such a patient is therefore a clinical rather than laboratory diagnosis. Routine testing of urine specimens in such patients is not advisable but prior to treatment with a course of corticosteroids or mitoxantrone, a dipstick test of the urine is recommended. If positive, it is reasonable to simultaneously treat the patient with a broad spectrum antibiotic and immunosuppressive treatment.

Recommendations

- ▶ Cranberry preparations may reduce the likelihood of infections (grade B).
- ▶ Urine should not be routinely tested unless the patient has symptoms suggestive of infection (grade D).
- ▶ In patients with recurrent urinary tract infections, cystoscopy and ultrasound should be carried out to exclude underlying abnormalities such as bladder stones (grade D).

MANAGEMENT OF SEVERE DISABILITY

With advancing disease, managements based on antimuscarinics, possibly detrusor injection of botulinum toxin and intermittent self-catheterisation, may prove inadequate or unsuitable. An indwelling suprapubic catheter can transform the life of patients and carers when other management options are becoming difficult or adversely impacting on lifestyles. It is important that patients are reviewed regularly and continue to be offered advice, appropriate for their level of disability.

PATIENT INFORMATION

The importance of patients understanding the cause of their symptoms and the rationale of suggested treatments cannot be overstated. Information on bladder dysfunction and its management, written for patients, is available from the MS support charities (MS Trust and MS Society) and patients should be encouraged to access this. Furthermore, patients should have ready access to healthcare professionals who have the appropriate expertise to offer advice on management of incontinence. Which service is best able to be of assistance will be determined by the severity of the problem but in the first instance referral by primary care to a continence service would be advisable.

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