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Non-neurogenic male lower urinary tract symptoms: A comparison of National Institute of Health and Care Excellence 2010 and European Association of Urology 2015 guidelines

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Abstract

This article aims to compare and contrast the guidelines issued by the European Association of Urology and the UK National Institute of Health and Care Excellence in relation to male lower urinary tract symptoms with a non-neurogenic aetiology. Overall, there appears to be a high level of concordance between recommendations made by the National Institute of Health and Care Excellence and the European Association of Urology, especially in their approach to the investigation and pharmacological treatment of men with non-neurogenic lower urinary tract symptoms. UK urologists should therefore be able to utilise the vast majority of European Association of Urology guidelines without fear of being at odds with existing National Institute of Health and Care Excellence guidance.

Keywords

Guidelines, National Institute of Health and Care Excellence, European Association of Urology, lower urinary tract symptoms, male

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Introduction

At their annual meeting in 2015, the British Association of Urological Surgeons officially endorsed the guidelines produced by the European Association of Urology (EAU). This article aims to compare and contrast the guidelines issued by the EAU and the UK National Institute of Health and Care Excellence (NICE) in relation to male lower urinary tract symptoms (LUTS) with a non-neurogenic aetiology.[1,2]

Comparison between the guidelines will be highlighted into one of four broad groupings:

1. Uniform agreement
2. Partial agreement
3. Disagreement
4. Isolated guideline without consideration in the other document

Where possible, the reasons for a lack of uniform agreement will be considered in relation to the UK healthcare system.

Throughout the documentation, NICE adopts widespread use of the word 'offered' to reflect the combined decision making process between clinician and patient. In

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Table 1. Uniform agreement.

Guideline	Notes	LoE	Grade
All men with LUTS should have a thorough medical history taken	Identifying underlying causes and co-morbidity	4	A
Physical examination including DRE should be routinely performed/offered	Predominantly for assessment for prostate size	3	B
Urinalysis must be performed/ offered to men presenting with LUTS at their initial assessment	Both recognise importance for identifying conditions e.g. UTI, diabetes mellitus, bladder cancer, stone disease	3	A
At initial assessment only offer/ perform renal function assessment if renal impairment is suspected	Based on history/clinical findings e.g. palpable bladder, recurrent UTI, history of stones	3	A
Do not routinely offer/perform cystoscopy	Only warranted if there is an additional indication	3	B
Do not routinely offer/perform upper tract imaging	Both recognise the low likelihood of finding pathology linked to the presenting LUTS	3	B
Post-void residual volume assessment should be offered/ performed	Not recommended by NICE at 'initial' (non-specialist) assessment but should be routine in specialist assessment	3	B

DRE: digital rectal examination; LoE: Level of Evidence; LUTS: lower urinary tract symptoms; NICE: National Institute of Health and Care Excellence; UTI: urinary tract infection.

contrast the EAU guidelines utilise the word 'performed' throughout their documentation. For the purposes of comparison these words may be used interchangeably as this is within the spirit of both documents. Whilst the setting for each recommendation is not strictly referred to in the EAU guideline statements as it is in the NICE guideline statements, the accompanying text clarifies the location and hence this is accepted as concordance between the guideline statements. NICE describe their recommendations as applying to men aged 18 years and older, whereas EAU apply their recommendations to men aged 40 years and older. In essence, both documents refer to the management of adult men, and clinicians should be mindful that LUTS in younger men might require more extensive evaluation. Finally, it must be recognised that the EAU guidelines relate specifically to the specialist assessment and management of LUTS whilst the NICE guidelines relate to both initial non-specialised assessment and management and to specialist assessment and management.

Diagnosis

The EAU and NICE guidelines show a high degree of concordance in their approach to the assessment of male LUTS as shown in Tables 1 and 2. Both emphasise the importance of a thorough medical history, examination and simple investigations such as urinalysis and post-void residual assessment. The clinical picture should guide the use of further investigations, for example cystoscopy and upper tract imaging.

Disagreement

Prostate-specific antigen (PSA) testing for men presenting with non-neurogenic LUTS. The EAU guidelines recommend testing for PSA levels if the diagnosis of prostate carcinoma will change management of a patient or if it will assist in the decision-making process in patients at risk of clinical progression. NICE recommend opening a dialogue with the patient to discuss the options of PSA testing if any of the following criteria are met:

(a) LUTS suggestive of bladder outflow obstruction (BOO) secondary to benign prostatic enlargement (BPE);
(b) Abnormal prostate on digital rectal examination (DRE);
(c) Concerns regarding prostate cancer.

Essentially NICE guidelines seem to be in agreement with those from the EAU in that PSA can be a useful prognostic indicator for risk of BOO secondary to BPE progression and may identify cases of clinically significant prostate cancer. However, the role of PSA screening for prostate cancer is controversial and may provoke unnecessary anxiety for patients. NICE therefore recommend giving men meeting the above criteria information about PSA testing and allowing patients to make their own informed decision regarding whether to proceed with testing or not.

Table 2. Partial agreement.

Guideline	NICE	EAU	Notes
Use of voiding diaries (FVC)	All men with bothersome LUTS 24 hours+(but commonly used for 3–7 days)	Men with predominant storage symptoms or nocturia Use for at least 3 days	NICE describe these as building on important information from the medical history and adding objectivity[3] Both acknowledge that there can be problems with patient compliance
Upper tract imaging	Only if: - chronic retention - haematuria - recurrent UTI - sterile pyuria - profound symptom - pain	Only if: - chronic retention - haematuria - urolithiasis	Both recognise the low likelihood of finding pathology. Both generally favour ultrasound as giving good images of urinary tract (except normal ureter) together with no radiation dose and fewer side effects
Cysto-urethroscopy	Only when clinically indicated e.g. - haematuria - recurrent UTI - sterile pyuria - profound symptoms - pain	With history of: - haematuria - urolithiasis - stricture - malignancy suspected - prior to surgery if findings would change treatment	Both utilise cystourethroscopy as a tool for excluding other underlying pathology on the basis of specific indications from the history or initial investigation
Uroflowmetry	Do not offer at initial assessment Do offer at specialist assessment	May be performed routinely. Should be performed prior to treatment	Reflects the fact that NICE guidelines address investigation and management in both primary and secondary care, whereas EAU guidelines assume specialist assessment

EAU: European Association of Urology; FVC: frequency voiding chart; LUTS: lower urinary tract symptoms; NICE: National Institute of Health and Care Excellence; UTI: urinary tract infection.

Multichannel cystometry. NICE recommends that specialist clinicians should consider offering multichannel cystometry if the patient is considering surgery. The aim of this is to improve the accuracy of diagnosis e.g. BOO or detrusor overactivity (DO) and so decrease the risk of an unsatisfactory outcome from surgery. However, NICE state that there is currently insufficient evidence for a stronger guideline recommending the test be offered to all patients prior to surgery. Clinicians may therefore find it challenging to justify which patients undergo this investigation prior to surgery while trying to utilise valuable resources efficiently. On the other hand, the EAU guidelines identify specific indications for pressure flow studies (PFS) prior to invasive lower tract treatment:

(a) PFS should be performed in men who have had previous unsuccessful (invasive) treatment for LUTS;
(b) may be used for patients who cannot void >150 ml;
(c) may be used in men with bothersome, predominantly voiding LUTS and post-void residual (PVR)>300 ml;
(d) may be used in men with bothersome, predominantly voiding LUTS aged >80 years;
(e) should be used in men with bothersome, predominantly voiding LUTS aged <50 years.

Several recommendations were found only in one document and not in the other, as shown in Table 3. EAU guidance recommends the use of validated symptom score questionnaires during assessment, citing them as a helpful tool in measuring symptom severity and also differentiating the predominant symptoms. NICE, however, describe them as time-consuming and as adding little to standard history-taking in initial assessment and this probably reflects the level of the intended cohort of the guidelines, namely the specialist for the EAU and the generalist or primary care physician, at least with respect to initial assessment, for NICE. Both parties agree on their usefulness in providing a baseline score prior to starting treatment to monitor response and in this respect exhibit concordance at specialist intervention level.

The EAU guidelines recommend imaging of the prostate, either by transabdominal or transrectal ultrasound (US), if this will assist in the choice of surgical technique, for example open prostatectomy, transurethral resection, transurethral incision of the prostate etc. or prior to starting treatment with 5-alpha reductase inhibitors (5-ARIs). In contrast, NICE describe selection of treatment options, both surgical and pharmacological, on the basis of estimated prostate size on DRE. This may reflect the variable availability of US in mainland European nations compared to the UK urological outpatient clinic settings as

Table 3. Isolated in one document but not the other.

Guideline	NICE	EAU
Validated symptom scores should be routinely used at assessment and follow up following pharmacotherapy		✓
FVC should be performed for 3 days		✓
Perform cystourethroscopy prior to minimally invasive therapy if findings will change management		✓
Image prostate if it will influence pharmacotherapy choice or prior to surgical intervention		✓
Offer pad testing if incontinence loss needs to be quantified	✓	

EAU: European Association of Urology; FVC: frequency voiding chart; NICE: National Institute of Health and Care Excellence.

Table 4. Uniform agreement.

Guideline	Notes	LoE	Grade
Offer an α1 blocker to men with moderate-to-severe LUTS	Alfuzosin, doxazosin, tamsulosin, terazosin	1a	A
Offer an anticholinergic to manage symptoms of OAB/mainly bladder storage symptoms	EAU place the caveat that caution is advised in men with a PVR>150 ml	1b	B
Offer an anticholinergic in combination with α1 blocker in patients who have persistent storage symptoms on monotherapy		1b	B
A trial of timed diuretic therapy e.g. late afternoon loop diuretic may be offered to men with nocturnal polyuria		1b	C

EAU: European Association of Urology; LoE: Level of Evidence; LUTS: lower urinary tract symptoms; OAB: overactive bladder.

well as the higher patient to urologist ratio in the UK, which may make this impractical and cost-ineffective. Additionally, patient acceptability may limit widespread use of transrectal US.

Management

When it comes to pharmacological management of LUTS, EAU and NICE show agreement in the choice of agents (Table 4), for example, recommending initial treatment with an α1 blocker for men with moderate to severe symptoms and anticholinergics either as monotherapy or in combination for patients with storage symptoms. When considering 5-ARIs, the two documents both recommend their use in patients at a high risk of progression, although they use slightly different parameters to define this risk as shown in Table 5. Table 5 also shows other areas where EAU and NICE make similar recommendations for management, for example in the use of transurethral resection of the prostate (TURP) as the standard surgical procedure for LUTS, transurethral incision of the prostate (TUIP) for smaller prostates and open prostatectomy for larger prostates.

Disagreement

Conservative management and initiating drug treatments. NICE state that drug treatment should only be offered to men with bothersome LUTS when conservative management options have been unsuccessful or are not appropriate. However, the EAU recommends that lifestyle advice be offered prior to, or concurrent with, drug treatment. This may reflect the scope of the NICE guidelines to include the management of patients within a primary care setting. In practice, many patients presenting to the urology service may have already have had a period of 'active surveillance' before being referred.

Phosphodiesterase-5-inhibitors (PDE5Is). PDE5Is may be used in men with moderate-to-severe LUTS with or without erectile dysfunction as per the EAU guidelines. In the UK, tadalafil 5 mg daily is the only PDE5I licenced for the treatment of benign prostatic hyperplasia (BPH). However, NICE do not recommend PDE5Is use for the sole purpose of treating LUTS except as part of a randomised control trial. This is currently one of the NICE research recommendations. This may represent a financial issue within the UK which may change with the loss of patents for tadalafil in the near future.

Table 5. Partial agreement.

Guideline	NICE	EAU
Lifestyle advice	Several specific recommendations e.g. urethral milking for patients with post micturition dribble, offering men with storage LUTS suggestive of OAB supervised bladder training, advice on fluid intake, lifestyle advice	EAU has a general recommendation to 'offer men lifestyle advice prior to or concurrent with treatment'. However they do expand on this and discuss fluid intake, bladder retraining etc. in the main body of text
Active surveillance/ watchful waiting	Refer to active surveillance (reassurance and lifestyle advice without immediate treatment and regular follow up) for patients with mild or moderate bothersome LUTS	Refer to watchful waiting for men with mild/ moderate symptoms, minimally bothered by their symptoms
5-alpha reductase inhibitors (5-ARIs)	Offer if estimated prostate size>30 g or PSA >1.4 ng/ml and who are considered high risk of progression (e.g. older men)	Offer if moderate-to-severe LUTS and enlarged prostate (>40 ml)
	5ARIs are not cost-effective in the general population of men with LUTS but as they have an impact on the natural history and progression of BPH are useful in the cohort of patients at risk of progression	
Combination of α1 blocker and 5-ARI	Offer to men with bothersome moderate-to-severe LUTS and prostates estimated to be larger than 30 g or a PSA level >1.4 ng/ml	Offer to men with moderate-to-severe LUTS and risk of disease progression (e.g. prostate volume >40 ml)
	Essentially the same rationale, with differing parameters for defining risk of progression	
Surgery for voiding symptoms presumed secondary to benign prostatic enlargement (BPE)	NICE recommend monopolar or bipolar TURP, or monopolar transurethral vaporisation of the prostate (TUVP) Or Holmium laser enucleation of the prostate (HoLEP) but only within specialist centres or with mentorship	EAU recommends monopolar TURP as the current surgical standard procedure for men with prostate sizes of 30–80 ml and bothersome moderate-to-severe LUTS secondary to BOO. They recommend that bipolar TURP achieves comparable results in the short to medium term with a more favourable safety profile than monopolar TURP
	Choice between monopolar/bipolar TURP is likely to be made on local availability, surgeon and patient preference Evidence analysed in NICE guidance does not find a statistically significant difference in the incidence of adverse events after bipolar or monopolar TURP	
TUIP	Offer as alternative in men with prostate estimated <30 g	Surgical therapy of choice in men with prostate size <30 ml, without a middle lobe
Surgery for prostate size>80 ml	Offer open prostatectomy as an alternative to TURP, TUVP or HoLEP	Open prostatectomy or HoLEP are the first choice treatments
Phytotherapy, homoeopathy, acupuncture	Do not recommend	Panel makes no recommendations regarding phytotherapy because of limited/poor evidence
Desmopression for nocturnal polyuria	Consider if medical causes have been excluded and they have not benefitted from other treatments. Measure sodium at day 3	In men <65 years. Screening for hyponatraemia at baseline, during dose titration and during treatment – day 3, day 7, at 1 month, then every 3 months

BOO: bladder outflow obstruction; EAU: European Association of Urology; LUTS: lower urinary tract symptoms; NICE: National Institute of Health and Care Excellence; OAB: overactive bladder; TUIP: transurethral incision of the prostate; TURP: transurethral resection of the prostate; TUVP: transurethral vaporisation of the prostate.

Minimally invasive treatments. Due to a lack of robust evidence supporting their clinical and cost effectiveness, NICE do not recommend the use of minimally invasive treatments including transurethral needle ablation (TUNA), transurethral microwave thermotherapy (TUMT), high intensity focused ultrasound (HIFU), transurethral ethanol ablation of the prostate (TEAP) and laser coagulation. In contrast, EAU explores each of these options as viable

Table 6. Isolated in one document but not the other.

Guideline	NICE	EAU
Offer men with storage LUTS (particularly urinary incontinence) temporary containment products to achieve social continence	✓	
Offer supervised pelvic floor muscle training to men with stress urinary incontinence caused by prostatectomy	✓	
Offer external collecting devices for managing storage LUTS in men before considering indwelling catheterisation	✓	
Offer intermittent catheterisation before indwelling urethral or suprapubic catheterisation to men with voiding LUTS that cannot be corrected by less invasive measures	✓	
Consider offering long term urethral catheterisation to men with LUTS - who failed medical management + not appropriate for surgery - who are unable to manage intermittent catheterisation who need to achieve continence for reasons of skin integrity or comfort	✓	
Beta-3 agonists may be used in men with moderate-to-severe LUTS who have predominantly bladder storage symptoms		✓
Agents to promote sleep may be used to aid return to sleep in men with nocturia		✓
Monopolar transurethral vaporisation of the prostate (TUVP) can be considered 1st line	✓	
Tm:YAG laser vaporesection (ThuVaRP) is an alternative for small- and medium-sized prostates		✓
Offer prostatic stents as an alternative to catheterisation for men unfit for surgery		✓
If offering surgery for LUTS presumed secondary to BPE only offer botulinum toxin injection into the prostate as part of a RCT	✓	
Section of recommendations for surgery for storage symptoms (9 recommendations)	✓	
Section of recommendations regarding treating urinary retention (10 recommendations)	✓	

BPE: benign prostatic enlargement; EAU: European Association of Urology; LUTS: lower urinary tract symptoms; NICE: National Institute of Health and Care Excellence; RCT: randomised controlled trial; Tm:YAG: Thulium-yttrium aluminum garnet.

alternatives within particular patient cohorts. For example, the EAU suggests that TUMT, which can be performed as an outpatient procedure and is associated with decreased morbidity compared to TURP, may be a good alternative for elderly patients with significant co-morbidities, despite its lower durability. This may in turn also apply to TUNA, although it has lower efficacy than TURP. For patients receiving anticoagulant medication or with a high cardiovascular risk, The EAU recommend that 532 nm (GreenLight) laser vaporisation should be considered. This disparity in guidance may reflect one of the core aims of NICE which is to provide effective and cost-efficient healthcare. The requirement of treating centres to have the trained staff and equipment to provide multiple different treatment modalities would incur significant costs and does not fit into the rigid cost-effective model demanded for NICE recommendation within the UK.

It is likely that the inclusion of some of the recommendations in Table 6 is merely a reflection of the broader scope of the NICE guidelines to include primary care rather than purely specialist assessment and intervention.

Both documents make clear that the aetiology of LUTS can often be multifactorial and while traditionally viewed as a result of BOO secondary to BPE, LUTS can be unrelated to the prostate. In keeping with this, both make recommendations about the use of anticholinergics in patients with predominately storage symptoms. Furthermore, the EAU additionally recommends the use of beta-3 agonists in these patients. In contrast,

Table 7. Uniform agreement.

Guideline	LoE	Grade
Follow up patients on α1 blocker at 4–6 weeks and then every 6–12 months	4	C
Review patients on anticholinergics at 4–6 weeks and then 6–12monthly	4	C

LoE: Level of Evidence.

Table 8. Partial agreement.

Guideline	NICE	EAU
Review patients on 5-ARIs	At 3–6 months and then every 6–12 months	At 12 weeks and 6 months

5-ARI: 5-alpha reductase inhibitor; EAU: European Association of Urology; NICE: National Institute of Health and Care Excellence.

the use of beta-3 agonists is not included in the most recent reiteration of the NICE guidance for managing LUTS in men, despite having been approved in earlier technology appraisal guidance[4] produced by NICE in 2013 for use in 'people' (presumably both men and women) who cannot tolerate antimuscarinics or have found them ineffective.

In terms of surgical management of storage symptoms, this is one area where the EAU guidelines may be seen to be lacking when compared to those of NICE as recommendations focus on surgical treatments for bladder outflow obstruction. NICE on the other hand make recommendations on the use of cystoplasty, botulinum toxin, sacral nerve stimulation and urinary diversion in this cohort if they fail to respond to conservative or drug treatment. Again, this is a reflection of the different remits of the guidance delivered rather than an opposing stance.

Follow-up

Both documents recommend an initial early follow-up and then regular infrequent visits after this, as shown in Table 7.

The level of partial disagreement in Table 8 is insignificant and reflective of the practicalities of offering overly rigid guidance for follow-up timings in a health service continually under increasing pressure with respect to increasing demand and decreasing workforce.

Conclusion

Overall, there appears to be a high level of concordance between recommendations made by NICE and the EAU, especially in their approach to the investigation and pharmacological treatment of men with non-neurogenic LUTS. UK urologists should therefore be able to utilise the vast majority of EAU guidelines without fear of being at odds with existing NICE guidance. NICE guidelines, however, are applicable to a broader audience by nature of their recommendations for service provision within a non-specialist and specialist context and may be useful for urologists when providing advice to non-specialist colleagues.

Whilst some aspects of specialist investigation, such a prostatic imaging, may not seem, at present, to be cost-effective or practical within a UK setting, the EAU do tend to be more specific in identifying which patients would most benefit from particular diagnostic tests, for example pressure flow studies, and so may have utility for the UK urologist in rationalising the use of these more time-consuming and expensive investigations. Both documents follow a stepwise approach to management, considering conservative, pharmacological and surgical treatments. The most obvious differences come when considering surgical intervention. NICE is, perhaps suitably, prescriptive of a limited number of treatment modalities which, on evaluation of the available evidence, have been deemed to be effective and cost-efficient within the UK healthcare model. However, in a culture where patients are increasingly well-informed, UK urologists may find the breadth of treatments for bladder outflow obstruction explored in the EAU guidelines a useful information resource for answering patients' queries and concerns regarding the many different surgical modalities, even if ultimately these are not available or appropriate within a national health service.

Conflicting interests

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