Urinary Retention Management Guidelines

Department of Urology

EXPLANATORY NOTES AND REFERENCES

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Urinary Retention Guideline Development Group

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Annex

Introduction

Acute Urinary Retention (AUR) is defined as a painful, palpable or percussable bladder, when the patient is unable to pass any urine[1]. Whilst Chronic Urinary Retention (CUR) is said to occur when there is a non-painful bladder, which remains palpable or percussable after the patient has passed urine[1]. CUR is often defined by the volume of post void residual (PVR). However, there is no consensus on the cut off PVR and whilst some have defined it as a volume of >300mls [2], others have defined other PVRs as the cut off volumes or given no cut off PVR at all[3, 4].

Acute Urinary Retention

AUR constitutes 45% of all lower urinary tract (LUT) consultations[5] and will be encountered by most physicians whatever their specialty.

AUR may be spontaneous or may be preceded by a trigger factor[6]. In spontaneous AUR there is no trigger identified, with AUR being part of the natural history of Benign Prostatic Hyperplasia (BPH), usually after a long period of LUT symptoms (LUTS). Triggered AUR may be preceded by bladder over-distension, surgery with general or regional anaesthesia, excess fluid intake, alcohol consumption, urinary tract infection, prostatic inflammation, faecal impaction, ano-rectal pain or use of drugs with sympathomimetic, anticholinergic or anti-histamine effects[7].

The risk of developing AUR is directly related to prostate size (>30mls associated with three-fold increased risk) [8], increased age, increased LUTS, poor flow rate, and larger PVR[9].

Acute Urinary Retention Management

1. Catheterise the patient. Urethral catheterisation is indicated for the relief of urinary retention. If urethral catheterisation fails contact the urologist for consideration of catheterisation using a hydrophilic guidewire or suprapubic catheterisation[10, 11].

2. Measure and record the residual volume[10, 11].

3. Test Urine and take Serum Renal Profile[10, 11].

4. Start Alpha Blocker – There is moderate quality evidence to suggest that the rate of successful trial without catheter (TWOC) increases with use of alpha blockers and the incidence of

recurrent acute urinary retention is lower in groups treated with an alpha blocker. This data was statistically significant for alfuzosin, tamsulosin and silodosin[12.]

Alfuzosin is given as a 10mg daily dose; tamsulosin is given as a 400mcg daily dose; whilst the dose for silodosin is 8mg daily[13]. Alfuzosin and tamsulosin may cause orthostatic hypotension, whilst silodosin is highly urospecific and less likely to cause this adverse effect. However, it is more likely to cause retrograde ejaculation, albeit with preserved orgasm[14].

Prior to starting an alpha blocker, the patient should be asked about planned cataract surgery. If such surgery is planned the initiation of alpha blockers should be avoided until after the surgery is complete in view of the risk of developing floppy iris syndrome intraoperatively[15].

5. Trial Without Catheter (TWOC) - There is no consensus on when this should be performed. In the UK the majority of patients undergo TWOC at 2 days post insertion of catheter; in France the majority undergo TWOC at 3 days. A few factors are known to influence success of TWOC. Age <70, detrusor pressure >35 mmH2O, initial residual <1L, prolonged catheterisation and an identified trigger are associated with higher success rates of TWOC. However, one should keep in mind that prolonged catheterisation is associated with higher morbidity including urosepsis, haematuria and urine leak[16].

6. If TWOC is successful the patient will need follow up of LUTS and medication review. If unsuccessful re-TWOC or surgery should be considered[10, 11].

Chronic Urinary Retention

CUR is invariably linked to an increased PVR; however, The European Association of Urology (EAU), American Urology Association and NICE guidelines on LUTS do not define threshold values for pathological PVR[17].

CUR is classified as High Pressure (HPCUR) or Low Pressure (LPCUR) based on urodynamic findings. Those with a bladder end filling pressure of <25cmH2O are described as LPCUR, while those with higher end filling pressures are classified as HPCUR[1]. Intravesical pressure remains high throughout the voiding cycle in HPCUR.

The two groups also defer in signs and symptoms at presentation with LPCUR patients complaining of hesitancy, slow stream and incomplete emptying. These patients are usually followed up in an outpatient setting and only require catheterisation if symptomatic[11].

HPCUR patients complain of urgency. Their serum creatinine tends to be elevated and imaging reveals dilation of the upper urinary tracts[18]. HPCUR patients require immediate catheterisation with careful recording of residual volumes and close monitoring of electrolytes as inpatients[11].

Post Obstructive Diuresis (POD)

Urine production exceeding 200 mL per hour for 2 consecutive hours or producing greater than 3 L of urine in 24 hours is diagnostic of POD[19].

Diuresis may be a physiological process post obstruction and helps to eliminate excess volume and accumulated solutes. However, this should resolve once haemostasis is achieved. Some patients will continue to have diuresis even after haemostasis is achieved and this is referred to as pathological POD. The pathophysiology is unclear; however, it is likely to be due to a combination of down-regulation of sodium transporters in the ascending loop of Henle, reduction in the glomerular filtration rate with resultant loss of juxtamedullary nephrons and a degree of nephrogenic diabetes inspidus[20].

If the patient's urine output exceeds 200mls per hour for 2 consecutive hours:

1. The patient requires admission for close monitoring for conversion to pathological POD.

2. These patients should have close urine output charting.

3. Daily weight should be recorded.

4. Serum renal profile should be monitored every 12 hours.

5. Urine should be collected for urinary sodium, potassium and osmolality.

6. All patients with pathological POD require intravenous fluid replacement run at a negative balance, with fluid type tailored to serum and urinary electrolyte levels and hydration status.

7. These patients will benefit from a consultation with a nephrologist[21].

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The Urinary Retention Management Guideline **MDHCPG/SUR01v1.0/2018** is approved.

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