JOINT MANAGEMENT OF ACUTE URINARY RETENTION IN EMERGENCY WARD OF PRINCE OF WALES HOSPITAL

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Introduction

- Acute urinary retention - a very common diagnosis in Urology admission
- Increasing incidence rate in our aging population
- Significant financial impact on health care system
Introduction

- Joint management between the Urology Team and the Accident and Emergency Team of Prince of Wales Hospital
- Decrease admission of this group of patients
- Improve the cost-effectiveness of management
Objective

- To report the result of joint management of acute urinary retention in Emergency Ward of Prince of Wales Hospital
Method

- Program started from October, 2007
- An integrated management pathway for acute urinary retention
- Standard treatment for all cases via the well-structured protocol
Integrated Care Pathway for Acute Urinary Retention

Patient’s Gum Label

ADMISSION TO EMERGENCY WARD

Inclusion criteria
☐ Retention of urine
☐ Normal vital signs
☐ Male aged over 60, provisional diagnosis of benign prostate hyperplasia
☐ Catheterization was performed

Exclusion criteria
☐ Unstable vitals
☐ Sepsis
☐ Gross haematuria
☐ Tumor felt on PR exam
☐ Neurological cause of retention (e.g. co-existing lower limb weakness)
☐ Bladder volume > 1 L
☐ Significant co-morbidities
☐ Difficult catheterization
☐ Suprapubic catheterization

INITIAL ASSESSMENT

Vitals

<table>
<thead>
<tr>
<th>Time</th>
<th>Pulse</th>
<th>BP</th>
<th>RR</th>
<th>Temp.</th>
<th>SaO2(%)</th>
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Volume of urine on first catheterization: ________ ml.
**Investigations**

- CBC  □ RLFT  □ Glucose  □ urine stix + CSU x C/ST  □ KUB
- □ U/S (optional)

**Treatment**

- Monitor urine output Q4H, I/O chart
- Analgesia e.g. Paracetamol 1g QID
- Eliminate precipitating element e.g. cough mixture, constipation
- Treat underlying UTI if necessary
- Start Xatral XL 10 mg daily for male over 60
- Recheck blood x RFT if necessary e.g. significant diuresis
- Plan discharge + EMW follow-up
- Pyridium and Paracetamol prn can be prescribed on discharge

**Progress**

Admission to urology should be arranged if any of the following occurs:
- □ Urine output > 800 ml in first 4 hours (discard the urine on first catheterization)
- □ Sepsis - Any two of:
  - Heart rate > 100
  - Resp rate > 20/min
  - Temp > 38°C
- □ Unstable co-morbidity
- □ Raised creatinine with suspected obstructive uropathy as the cause or in the absence of pre-existing renal failure.

**Criteria for discharge (period of observation ~24 hrs)**

- □ Clinically improved
- □ Afebrile
- □ Pulse and blood pressure within normal limits
- □ Social circumstances permit discharge
- □ Appropriate follow-up for Trial without catheter (TWOC)
- □ Patient advised of diagnosis, care of Foley catheter (pamphlet) and treatment plan
- □ Patient informed that they should return to A&E if symptoms persist or worsen
Discharge instructions for patients (to be constructed by nursing team)
General information & advice
Come back if......

EMW follow-up for trial without catheter (TWOC)

Date:____________________
Time: 08:00
Every Monday and Thursday

Urologists will come to EMW every Monday and Thursday after 2 pm.

In case the date of follow-up falls on public holiday, EMW follow-up will be postponed to the next working Mon/ Thur.

Management flowchart – see separate integrated care pathway
Care pathway for Trial without catheter

(A) Nurse removes catheter at 8 am approx

Patient Voiding

~ 2 hours

Patient NOT Voiding

(B) If scan greater than acceptable residual and NOT uncomfortable re scan in 2 hours

(F) Comfortable

(I) Uncomfortable

(G) Rescan after 2 hours

(H) If bladder content above acceptable level

(C) If scan decreasing but still above acceptable residual re scan after 2 hours

(E) If comfortable and scan acceptable - discharge

(D) If residual continues to decrease scan after 2 hours

Rescan after 2 hours

Catheterise

If at ANY point the patient is uncomfortable catheterise
Flowchart for Management of Acute Retention of urine

AROU

Admit Emergency Medicine Ward (EMW)

Discharged with Xatral

Fail

EMW review clinic x TWOC

Admit Surgical Ward

Success

Surgical options e.g. TURP/Laser prostatectomy offered

Long term Foley

Book FU at SURURO clinic at next available session

The pathway inside the red box is to be performed at AED/ Emergency Medicine Ward. The pathway outside the red box is to be decided by urologists during follow-up.
Results

- From October, 2007 to January, 2008
- Patients number: 68
- Age range: from 57 to 87 years old
- Average length of stay per each patient was less than one day
Flowchart for Management of Acute Retention of urine

AROU (68 patients)

Admit Emergency Medicine Ward (EMW)

Discharged with Xatral (59 patients)

EMW review clinic x TWOC

Fail

Surgical options e.g. TURP/Laser prostatectomy offered (20 patients)

Admit Surgical Ward (9 patients)

Success

Long term Foley (3 patients)

Book FU at SURURO clinic at next available session (45 patients)

The pathway inside the red box is to be performed at AED/ Emergency Medicine Ward. The pathway outside the red box is to be decided by urologists during follow-up.
Discussion

- Alpha-blocker (Xatral XL 10mg daily po) for male over 60
  - Debruyne FMJ, Van Der Poel HG. Clinical experience in Europe with uroelective alpha1-antagonists. Eur Urol 1999;36(Suppl 1):54-8
Discussion

- Xatral XL was used instead of Prazosin
- Prazosin
  - first-line drugs used in acute urinary retention recommended by Hospital Authority Drug Formulary
- Xatral XL
  - Although more expensive, it is non-titratable, less hypotensive effect, is proven to be clinical and economic benefits
    - Lieven Annemans et al. The economic impact of using alfuzosin 10mg once daily in the management of acute urinary retention in the UK: a 6-month analysis. BJU 2005, 96, 566-571
    - S.A. Mcneill et al. Alfuzosin 10mg once daily in the management of acute urinary retention: Results of A double-blind placebo-controlled study. UROLOGY 65: 83-90, 2005
Discussion

- Average length of stay per each patient was less than one day
- Minimal length of stay in the past – at least three days
  - Day 1: assessment of patients and investigation of causes of acute urinary retention
  - Day 2: prescription of alpha-blocker (Prazosin) and monitoring of side-effects, especially hypotension
  - Day 3: trial without catheter
Cost reduction per each patient

- Average cost of in-patient management per day
  ~$3,000
- Mean cost of management per each patient in this program
  ~$3,000 X 1day = ~$3,000
- Minimal cost of management per each patient in the past
  ~$3,000 X 3 days = ~$9,000
- Cost reduction per each patient
  ~$9,000-$3,000=~$6,000
Approximated cost reduction in this program

- 59 patients (87%) were discharged with follow-up without admission
- 87% reduction of admission rate
- Approximated cost reduction in 3-month-time (From October, 2007 to January, 2008)
  - 59 patients X ~$6,000 (Cost reduction per each patient) = ~$354,000
- Approximated average cost reduction per year
  - ~$354,000 X 4 = ~$1,416,000
Discussion

- Triage procedure mainly by nursing staff in Emergency Ward
- Decrease involvement and workload of inpatient medical staff
- Further improved cost-effectiveness of management
Discussion

- Well structured protocol system
- Easy to follow
- Decision making by urology trainee
- Integrated management pathway
- Good experience of two teams working together
- Improved communication and relationship between our team and Emergency Team
Conclusion

- Under this protocol-driven multi-disciplinary treatment approach
- Great reduction of admission and cost of management
- Without compromising the quality of care
- Proved to be cost-effective management
- The impact on the management of these patient groups in our health care system is encouraging
The end