# SCI BLADDER MANAGEMENT

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## 1. Overview/Goals of SCI Bladder Management:

☑ preventing retention (to avoid distension)
☑ maintain continence
☑ avoid UTI's; avoid overtreating with antibiotics

## 2. Urinary Tract Infections: (SEE ALGORITHM FOR UTI BELOW)

****AVOID TREATING ASYMPTOMATIC BACTERURIA AS MANY SCI PATIENTS WILL BE COLONIZED IF USING SOME FORM OF CATHETERIZATION****

### Criteria for UTI

- significant bacteruria[1]
- pyuria (WBC in urine)
- signs and symptoms (NOTE: often will not have typical symptoms) may have:
    - fever
    - autonomic dysreflexia
    - increased spasms
    - change in urine (cloudy; blood; sediment)
    - decreased urine control; incontinence
    - abdominal discomfort
    - malaise

[1]Varies according to type of bladder management:
- Intermittent Self Catheterization: ≥ 102 cfu/ml of pathogen
- Condom Catheter: ≥ 104 cfu/ml from clean voided specimen
- Indwelling/Suprapubic Catheters: any detectable concentration of uropathogen
- Spontaneous: ≥ 105 cfu/ml

****GOLD STANDARD is urine C&S- obtain culture before treatment!****

Considerations:

Urine Dipstick- It is uncertain if dipstick testing for nitrates or leukocyte esterase is useful in screening for bacteriuria to assist treatment decision-making.

Consider giving patients urine containers as urine can be refrigerated for 24 hrs

Change catheters before urine sample obtained recommended

Greater than 3 UTIs in a year or hematuria should warrant investigation

Treatment (same as treating "Complicated UTIs")

★ ideally based on culture and sensitivities

| ANTIBIOTIC | DOSE | COMMENTS |
|---|---|---|
| First Choice | | |
| Ciprofloxacin | 500mg bid X14d or<br>1000mg XL od | most common used |
| Ofloxacin | 200mg bid X 7d | |
| Norfloxacin | 400mg bid X 14d | *more resistance |
| Alternatives | | |
| TMP/SMX | 1 DS tab bid or<br>2 tabs bid | ** resistance often seen |
| Nitrofurantoin | macrobid 100mg bid | not active against many strains |
| Cephalexin | 500mg qid | may be reasonable |
| Cefixime | 400mg od | may be reasonable |

Antibiotic Prophylaxis
Controversial and should be considered by urologist

## *MANAGEMENT OF UTI*

****IMPORTANT: many who catheterize in some form will have bacterial colonization (asymptomatic bacturia) and goal should be to avoid treating without first doing a culture when possible!!**

Patient presents with suspicion of UTI

↓

Definition of UTI: significant bacturia **WITH** signs & symptoms

↓

Possible S&S of UTI in SCI:(NOTE: often will not have typical symptoms)

- •fever
- •autonomic dysreflexia
- •increased spasms
- •change in urine (cloudy; blood; sediment)
- •decreased urine control; incontinence
- •abdominal discomfort (flank, suprapubic)
- •malaise
- •leukocytes in urine

↓

DIAGNOSIS
(****URINE C&S GOLD STANDARD & PREFERABLE TO OBTAIN BEFORE INITIATING TREATMENT****):
(also consider other causes of symptoms i.e. catheter kinking; constipation)

↙ ↘

<u>UTI POSSIBLE</u>

Compatible S&S; patient well (non-toxic)

↓

Do not treat (risk of treatment outweighs benefit)

↓

Send Urine for C&S

↓

Treat based on results[t]

<u>UTI MORE LIKELY</u>

Compatible S&S; patient history concerning:

- • fever
- • systemically unwell
- • history of urosepsis, solitary kidney, etc.

↓

Treat Empirically (if benefit of treatment outweighs risk of waiting for C&S)[t]

↓

Send Urine for C&S

[t]see antibiotic recommendations in table

*****currently dipstick testing is NOT recommended to guide decisions regarding UTI in SCI as not reliable

3. Methods of Bladder Emptying

2 Main types:

A. Detrusor Overactivity Associated with Sphincter Dysnergia (DESD):

- hyperactive detrusor(bladder) and external sphincter
- most common dysfunction
- usually SCI lesions above L1

    - Emptying-
        - ✦ Clean intermittent Self Catheterization (CISC) preferable (q 4-6 hrs)
        - ✦ suprapubic catheter
        - ✦ urethral catheter (higher rates of complications)
        - ✦ reflex voiding

    - Storage (relax detrusor)-
        - ✦ anticholinergics often used
            - -oxybutynin 5mg tid
            - -tolterodine 4mg bid
            - -trospium chloride 20mg bid

B. Detrusor Areflexia

- less common
- injury at level of cauda equina

4. Monitoring/Preventative Measures:

ANNUALLY (at least) review bladder management:

- Creatinine, electrolytes and eGFR
- Ultrasound kidneys and genitourinary system yearly for 1st 3 years post injury then biannually
- greater than 3 UTIs in a year or hematuria should prompt investigation

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