

Antibiotics Prophylaxis with Urodynamic Studies in Spinal Cord Injury: Assessing Practice Patterns and Outcomes to Guide Future Practice in a Single Center

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Intro

- SCI patients have high rates of UTI, and frequently undergo UDS, a known risk factor for developing UTI
- Peri-procedural prophylactic antibiotics is commonly used during UDS, though little consensus guidelines exist to inform practice, leading to varying practice patterns nationwide.

Methods

- Retrospective cohort of 331 patients with SCI undergoing UDS at a single center
- Pre-UDS culture results, antibiotics usage, and UTI rates were captured
- Resistance trends of most commonly grown organisms against most commonly used antibiotics were analyzed
- Descriptive analysis and narrative commentary performed on trends

Results

- 49% of patients (n=164) had positive pre-UDS urine cultures
- Antibiotics were used in 86% of cases, with a majority of cases (53%) utilizing single-dose intramuscular gentamicin pre-procedure
- Top 3 antibiotics used were gentamicin, flouroquinolones, and 3rd generation cephalosporins
- Top 3 organisms grown were E coli, Enterococcus, and Klebsiella species
- No post UDS UTI occurred during study period
- Aminoglycosides provided >90% coverage for top 3 organisms grown in study period, without significant increase in resistance to aminoglycosides seen in subsequent year

Discussion

- Liberal gentamicin usage was part of our current practice pattern locally, where a very low incidence of post UDS UTI was seen, with also very low rate of development of resistant organisms to gentamicin
- No consistent criteria seen of when prophylaxis antibiotics was needed, leading to varying usage and high number of patients who received antibiotics despite having sterile pre-procedural urine culture
- Numerous limitations exist, including most notably possible underestimation of true UTI rates given markedly different values compared to established data

No post-UDS UTI occurred under current local practice pattern where most patients received a single-dose intramuscular gentamicin as prophylaxis.

Though gentamicin prophylaxis may play a role in reducing post-UDS UTI, definitive conclusions cannot be made given significant limitations with study design.

More data on long term resistance pattern and side effect burden of this practice is needed, in addition to a peri-UDS prophylactic antibiotic appropriateness decision model, incorporating local infection rate, preprocedural culture data, and individual patient factors.

Extra Figures & Tables

Antibiotics Usage in Relation to Pre-procedural Urine Culture Results

	Positive culture	Negative culture	No culture	Total
Antibiotics used	155	59	70	284
No antibiotics used	9	18	20	47
Total	164	77	90	331

- Positive cultures in 50% of cases
- Antibiotics used in ~86% of cases
- 95% of patients with positive cultures received antibiotics
- 76% of patients with negative cultures received antibiotics

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