Evaluation of the treatment of urinalyses and urine cultures in multiple sclerosis patients in a neurology clinic

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ABSTRACT

Background : Patients with Multiple Sclerosis (MS) experience lower urinary tract dysfunction (LUTD) that in some cases, may necessitate catheterization. Discerning asymptomatic bacteriuria (ASB) from urinary tract infection (UTI) in MS patients is complicated by LUTD, leading to potentially inappropriate antimicrobial use. The purpose of this study was to evaluate the antimicrobial treatment practices of positive urine cultures in patients with MS.
Methods: A single-center, retrospective study. Positive cultures in patients with diagnosed MS (ICD10: G35) were included. The primary outcome was the proportion of patients that were appropriately treated with or without antimicrobial therapy. Secondary endpoints included antimicrobial selection and urinalysis obtainment and positivity.
Results: Two hundred and thirty-six 236 cultures from 139 patients were evaluated. Frequency, nocturia, dysuria, and foul-smelling urine were reported by patients in 54 (23%), 10 (4%), 25 (11%), and 14 (6%) of cases, respectively. Treatment was inappropriate in 81/201 (40%) of treated cultures. The antimicrobial selected was considered too broad in spectrum for 35/201 (17%). Of those, fluoroquinolones were the agents utilized in 33/35 (94%) cases. A urinalysis was sent in 200 (85%) cases, with 197/200 (99%) positive for at least one of four pre-defined positivity criteria.
Conclusions: Urinalyses and urine cultures are obtained frequently in patients with MS, often independent of patient symptomatology. Multiple sclerosis patients may be treated for ASB at higher rates than the general population, and traditional urinary symptoms may not be appropriate indicators of infection. Empiric therapy for UTI is frequently utilized in this population, often resulting in too broad of antimicrobial therapy. .

BACKGROUND

Multiple sclerosis (MS) is a neuroinflammatory, demyelinating disease of the central nervous system

Relapse vs. **Disease Progression** vs. **Infection**

PURPOSE

Evaluate the antimicrobial prescribing practices in the treatment of positive urine cultures in MS outpatients

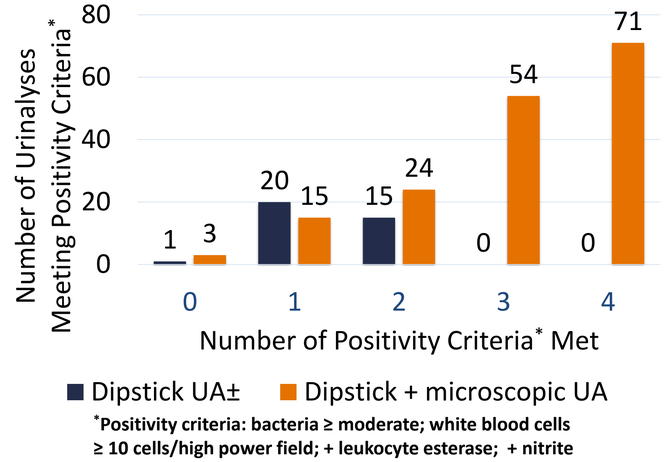
DEFINITIONS

Positive culture	Urinary symptoms	MS flare/ progression symptoms	Antimicrobial therapy appropriateness
X	X	X	Appropriate
X	X		Appropriate
X		X	Potentially appropriate
X			Not appropriate

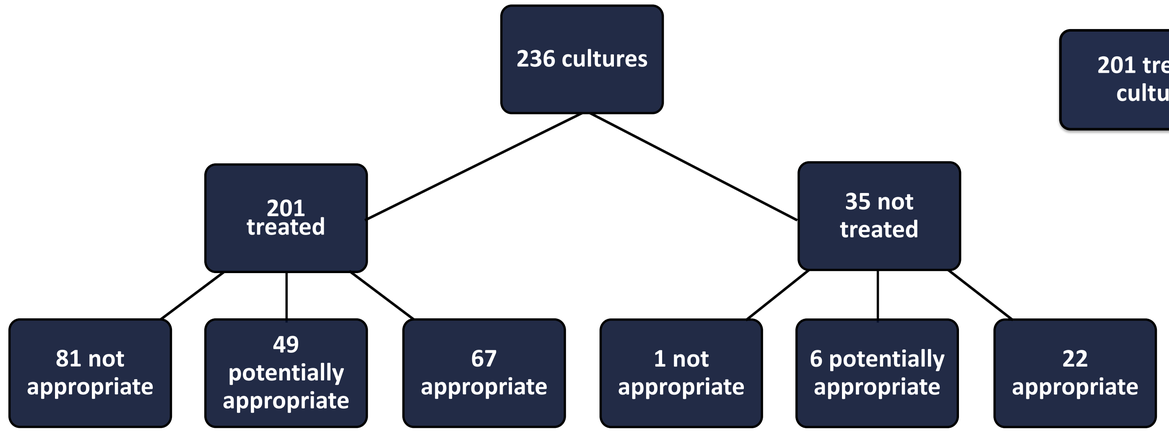
Standardized guidance for the evaluation of MS-specific signs and symptoms of UTIs may be beneficial in reducing unnecessary antimicrobial treatment.

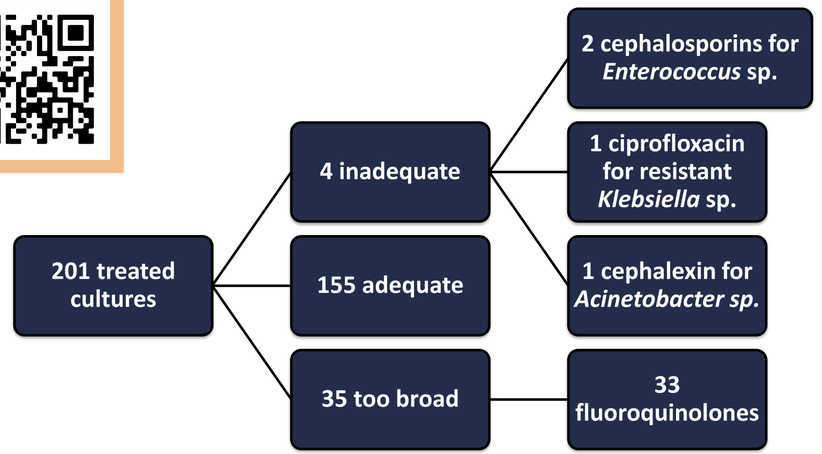
- 40% of positive urine cultures were treated despite a lack of new urinary or MS flare/progression symptoms
- 17% of UTIs were treated with an antimicrobial considered to have too broad of a spectrum of activity
- 2% of UTIs were treated with an antimicrobial that was not effective against the organism identified on culture

RESULTS



*Positivity criteria: bacteria ≥ moderate; white blood cells ≥ 10 cells/high power field; + leukocyte esterase; + nitrite





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