

ERTAPENEM IN THE TREATMENT OF OVERACTIVE BLADDER

Hypothesis / aims of study

Urinary tract infection (UTI) explains overactive bladder (OAB) treatment failure.

Background

The recent description of undetected urinary inflammatory signals in women with overactive bladder (OAB) opens a new avenue for research. The criterion used to define positive midstream urine (MSU) culture (1) is found wanting and in truth clinicians are working in the dark. A negative urine culture, in the face of symptoms, may well be misleading but there is little data guiding the correct response

The discovery of intracellular bacterial colonisation at the core of chronic urinary tract infection (UTI) associated with OAB is a face changer (2,3). Conventional treatments not likely to address such ingrained infection and single daily prophylactic treatment must widely miss the mark. The implications are for a wider use of antibiotics but not before an evidence set has been compiled. A first step would be to refute the hypothesis by observing no symptom response to exposure to high doses of unequivocally effective antibiotic therapy

Study design, materials and methods

We studied 27 women with recalcitrant OAB symptoms and pyuria (≥ 10 wbc μl^{-1}). They were MSU culture negative. They had failed to respond to antimuscarinic and oral urinary antibiotic regimes. Despite negative cultures, they were treated with intravenous Ertapenem 1g daily for 5 days. Given the antibiotic, the probability of resistance was extremely low and Extended-Spectrum Beta-Lactamases (ESBL) microbes were unlikely to survive. Following treatment, patients were placed on full dose oral urinary antibiotic therapy and were reviewed weekly.

Inclusion Criteria	Exclusion Criteria
>18 years	Acute UTI
OAB patients	Culture positive MSU
Pyuria ≥ 10 wbc μl^{-1}	Acute dysuria
MSU Culture negative	Pyuria 1-9 10 wbc μl^{-1}
Failed Antimuscarinic treatment	Systemic signs of urosepsis
Failed oral antibiotic treatment	Renal Failure
	Hepatic dysfunction
	Pregnancy

Results

27 women (mean age =57 years sd=16) were studied through treatment. This small sample was not suitable for formal statistical inference, but the observations were notable. Voiding symptoms were noted to fall in the immediate aftermath of treatment but less so, OAB symptoms and pain. Urine microscopy showed a reduction first in uroepithelial cell shedding (Fig 1), followed by falling pyuria.

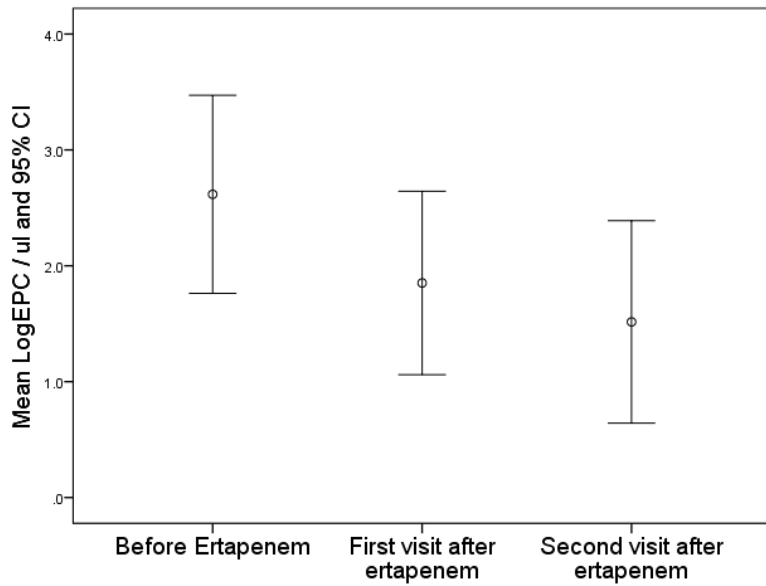
Interpretation of results

Multivariate regression

Dependent = Log₁₀ EPC

Independent predictors = Log₁₀ WBC and Visit number

R =.54, R² =.3 F= 4.9, p = .006



Concluding message

These patients, who exhibited microscopic pyuria had negative routine culture had proved recalcitrant to antimuscarinics and oral antibiotics. Despite absent microbiological data, they were exposed to aggressive antibiotic treatments and showed a response. These data are only indicators but express a need to reappraise our whole approach to UTI in LUTS.

References

1. Arch. Intern. Med., 100 (1957) 709-714
2. Trends Microbiol., 12 (2004) 424-430
3. Science., 301 (2003) 105-107

Disclosures

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