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.

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

Disclosures
Funding: nil Clinical Trial: No Subjects: HUMAN Ethics Committee: Approved by East London & the City REC, Reference No: 07/H074/74 Helsinki: Yes Informed Consent: Yes