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## **The Prevalence of Extended-Spectrum Beta-Lactamase (ESBL) Producing E. Coli and Klebsiella Pneumonia in Urinary Tract Infection in Long-Term Care facilities.**

R.H. Khoury, I.Y. Ryzhkova, B.P. Salmon, A. Gandhi, P. Gudaitis, D. Gudaitis, A. V. Gudaitis. Aculabs, Inc., East Brunswick, NJ. The American Geriatrics Society Annual Scientific Meeting, 2008.

### **Background**

Urinary tract infection (UTI) is one of the most common infections in the geriatric population and can lead to serious complications, including death. Organisms that produce ESBL are a big concern in Long-Term Care facilities where they can spread rapidly where most of the residents are elderly, frail and are on multiple medications. In addition, identifying these organisms in a urine culture is becoming a challenge to physicians by limiting their therapeutic options since they are resistant not only to extended-spectrum cephalosporins but other antibiotics such as aminoglycosides and sulfonamides, and some strains have acquired resistance to Fluoroquinolones and cephamycins.

### **Design**

We analyzed data from 1,184 specimens collected for urine culture over a period of 3 weeks from residents in Long-Term Care facilities. Cultures were done utilizing MicroScan Walkaway 96 conventional panels. We calculated the prevalence of UTI among the population tested; no growth and <10,000 colonies were considered negative, cultures with >50,000 colonies were considered positive. The positive cultures were separated further by the organisms isolated and by gender and age.

### **Results**

45.4% of cultures were positive of which women accounted for 75.7%. E.coli and Klebsiella pneumoniae accounted for 59.3% of the total isolates; 5.1% of the E.coli and 24.4% of the Klebsiella were positive for ESBL.

ESBL-producing organisms accounted for 7.9% of the total isolates. By gender, ESBL-producing organisms were found 9.3% in men and 6.0% in women.

### **Conclusion**

The finding that UTI is more common in the elderly with the relatively high occurrence of ESBL-producing organisms supports the notion that Long-Term Care facilities could be a reservoir for these microbes. An infection control priority should be to identify the risk factors for ESBL, which would help to limit the spread of these bacteria in the geriatric population.