

Background: As many as half of elderly residents at nursing homes have asymptomatic bacteriuria. Thus it's hard to know if a new symptom is related to findings of bacteria in urine or not. There are different opinions on the possible connection between different non-specific symptoms and urinary tract infections (UTI). Non-specific symptoms in combination with diagnostic uncertainty often lead to antibiotic treatments of uncertain value. Antibiotic overuse increases the prevalence of antibiotic resistant bacteria.

Research question: What is the relationship between bacteria in the urine and new or increased fatigue, confusion, restlessness, aggressiveness, not being herself/himself, dysuria, urgency and fever.

Methods: In this cross-sectional study symptoms were registered and voided urine specimens collected for urine cultures from 651 elderly residents in 32 nursing homes located in south-western Sweden. Correlation between bacteriuria and presence of a symptom at group level were determined using logistic regression. To estimate the clinical relevance of correlations at group level positive and negative etiological predictive values (EPV) were calculated. EPV takes into account the presence of asymptomatic bacteriuria.

Results: In this study 207/651 (32%) of urine cultures were positive. Fatigue, restlessness and confusion were the most common symptoms. Logistic regression indicated some correlations at group level. Aside from *Escherichia coli* in the urine and not being herself/himself present for at least one month, but less than three months, EPV indicated no clinically useful correlation between any symptoms in this study and findings of bacteriuria.

Conclusion: Urine cultures are insufficiently specific when evaluating elderly patients at nursing homes presenting with new or increased restlessness, fatigue, confusion, aggressiveness, dysuria or urgency.