Bacteriological analysis of urinary tract infections found in a French nursing home. Establishment of an empiric antibiotic therapy protocol

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INTRODUCTION

Bacterial infections are common in the elderly. They are the third leading cause of death in France (1). The prevalence of infections in nursing homes (NH) varies between 1.6 and 32.7% (2) and for Urinary tract infections (UTI) the prevalence is 40% (3).
Elderly people in institutions receive 2 times more antibiotics than at home (4). Urinary colonization has a high prevalence in the elderly : risk increases with age, female gender and dependence (20 to 50%) (5). Treatment of urinary colonization may lead to emergence and spread of antibiotic-resistant bacteria.
The aim of this study is to adapt the French infectious diseases recommendations (SPILF) (6) to the nursing home bacterial ecology wich receive 310 elderly people.
The fight against infectious risk in nursing homes requires a better control of the bacterial ecology. Knowledge of urinary germ resistance patterns allowed us to develop an adapted antibiotic protocol.

MATERIAL AND METHODS

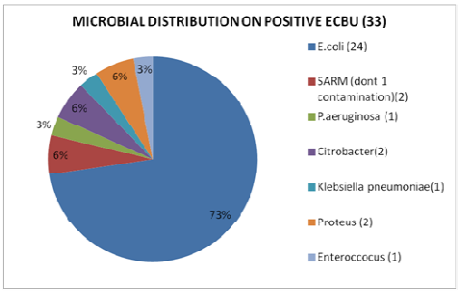
This retrospective study was performed during one year in 2013.

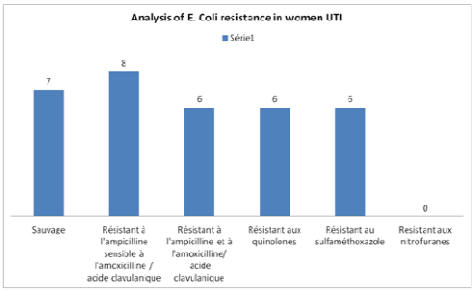
We performed:
1. a descriptive analysis of the population (age, gender) with UTI ;
2. an analysis of the urinary tract bacterial ecology of the NH ;
3. a descriptive analysis of the request s relevance for urinalysis.

RESULTS

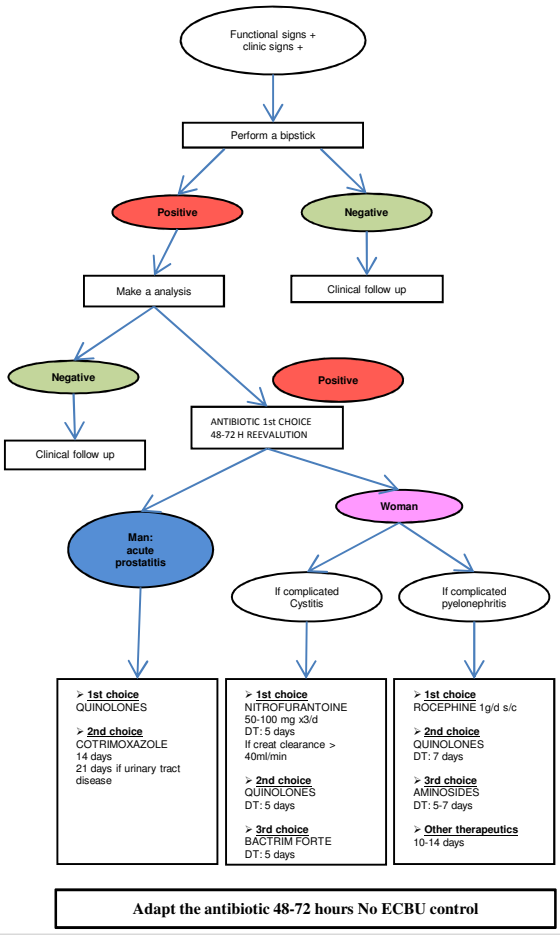
Results :112 urinalysis were done in 2013 in our NH
34 with antibiotic test in 66 women (59%) with a mean age of 88.95 years, and 46 men (41%) with a mean age of 70.72 years . Of the 112 urine cultures performed, 29.46% are positive (33).

In women, E. coli was found in 73 % of cases (24/33) :
✓ 32 % of E. coli were sensible for most antibiotics (7/24)
✓ 40 % of E. coli were resistant to ampicilline and sensitive to amoxicilline-clavulonic acid (8/24)
✓ 28 % of E. coli were resistant to ampicilline ans amoxicilline-clavulanic acid (6/24)
✓ 28 % of E. coli were resistant to quinolones (6/24)
✓ 28 % of E. coli were resistant to sulfamides (6/24)
✓ 0 % were resistant to nitrofurantoïnes.





Empiric antibiotic therapy protocol



DISCUSSION - CONCLUSION

This study allowed to customize the management of urinary tract infections in NH, control the risk of infection, limit the emergence of bacterial resistance and enhance the relevance of the antibiotic chosen.
Asymptomatic bacteriuria is the most common situation of inappropriate antibiotic prescription (7), which reached 50% in some studies (8).
In our study, 70% of urine cultures were negative! So all urinary cultures are not always necessary.
Clinical follow up and monitoring remains the best practice (9).
The establishment of an antimicrobial management plan has proved its interest in decreasing antibiotics consumption (10).
An annual measure of antibiotic consumption will help us to assess the impact of this protocol. This protocol will be renewed in 2-3 years following the evolution of germs resistance.

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