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Abstract n° K 940

Background.
Analysis of antimicrobial prescription according to patients characteristics is of major interest to prevent resistance.
Method.
One-day prevalence survey in a sample of hospitalized patients in 38 voluntary French hospitals by using a questionnaire adapted from ESAC.
Results.
A total of 3964 patients were surveyed (39% in medicine, 29% in surgery, 12% in ICUs, and 20% in other departments), including 1276 (32%) with an antimicrobial treatment. Among the latter, 35% received B-lactams+inhibitors, 24% fluoroquinolones (FQ), 22% 3rd generation cephalosporins. 51% were treated for community infections, and 39% for nosocomial infections (10% unknown), including 22% and 34% ($p<.01$) for >7 days at the date of survey, respectively.

34% of the patients with community infections received >1 drug vs 48% among those with nosocomial infections (p<.01). A total of 23% of patients with antibiotics did not have any microbiological sample drawn (64% among community infections, 24% among nosocomial infections, and 12% among infections of undetermined origin), including 19% with a duration of treatment >7 days at the date of survey. Patients with proven MDR bacteria (8%) were significantly treated with > 1 drug, for a longer duration of time than others.

Conclusion. Despite a large dissemination of guidelines during the last years, 1/4 of patients with community infections received >7 days of treatment, and 1/3 more than 1 drug. More surprisingly, a large proportion of all patients received antimicrobials for more than 1 week without documented infection. Finally, the large proportion of patients receiving FQ should be put in perspective with increased resistance rates Consequently, education and antibiotic stewardship should be implemented in French hospitals.

Spa Spa

Survey of Antibiotic Prescriptions (SPA) in a Network of French Hospital in 2009

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Background

- In Europe, it is estimated that about 175 000 patients are dying each year from untreatable infection (*European Academics Scientific Advisory Counci 2008*)
- Better use of antimicrobials is key to prevent bacterial resistance to antibiotics (*French National Plan for Antibiotic Preservation 2002*)
- France is one of the countries with the highest consumption of antibiotics in Europe (*ESAC 2008*)
- The French Health Agency recommends to evaluate quality of antibiotic use (*Stratégie d'antibiothérapie et prévention des résistances bactériennes en établissement de santé - Avril 2008*)
- There is a lack of data on antibiotic use at the national level in France, besides total consumption

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Objectives of the study

- To valuate the proportion of inpatients receiving antibiotics and antifungals for treatment of infection (antimicrobial prophylaxis excluded) in a large number of French hospitals
- To describe characteristics of patients receiving antimicrobials
- To valute the faisability of a large scale study by a pilot survey
- To improve the representativeness of French data in European networks

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Methods

- Observational one-day prevalence study
  (18 novembre 2009, *European Antibiotic Day*)
- Voluntary hospitals
  - from all patients in one ward to all inpatients
- Questionnaire adapted from the European (ESAC) and the French Health Agency Questionnaires

For all inpatients, collection of:

- **Basic demographic data**
- **Risk factors for multidrug-resistant bacteria**

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Methods

For patients receiving antibiotics, collection of:

- **Antimicrobial treatment**
  - date of start
  - drugs
  - route of administration, frequency …
- **Infection :**
  - site
  - community vs nosocomial
  - foreign devices
- **Microbiology**
  - samples drawn
  - availability of results (microscopy, culture, susceptibility)
- **Multidrug-resistant bacteria**

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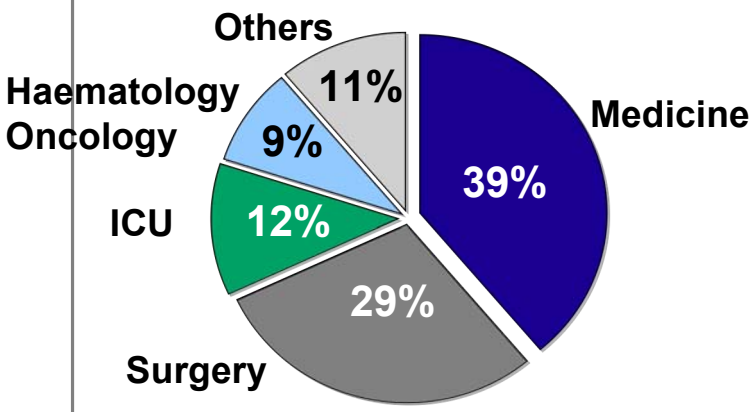
Results

38 hospitals, 3 964 patients (n = 15 to 393)
Age : 63 ± 20 years Female : 52 %

Distribution of patients/type of ward



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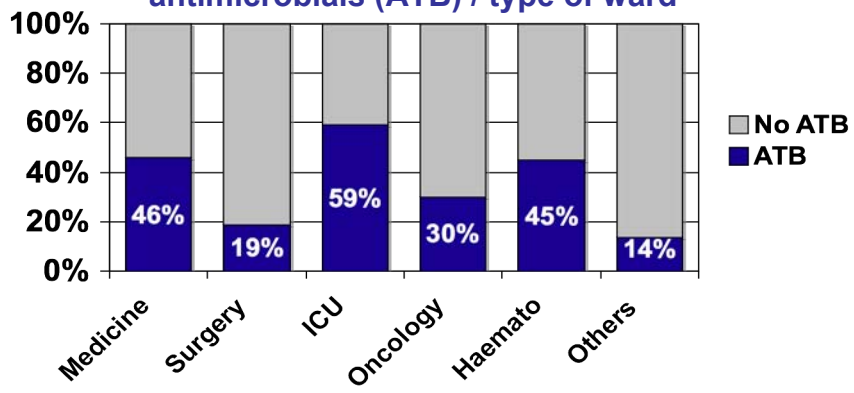
Antimicrobial treatment

1 276 inpatients/3 964 observed (32 %)
receiving ≥1 antimicrobial the day of the study

Proportion of patients receiving antimicrobials (ATB) / type of ward



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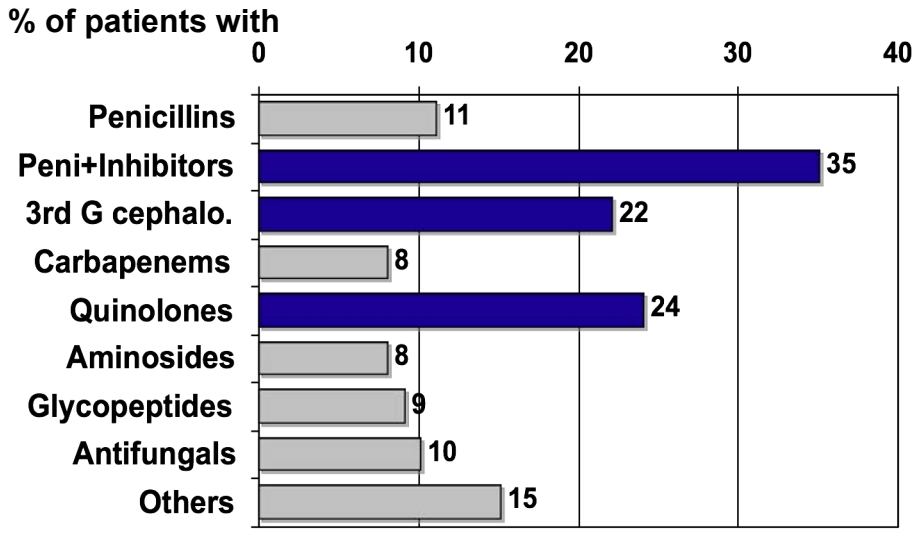
Distribution of antimicrobials



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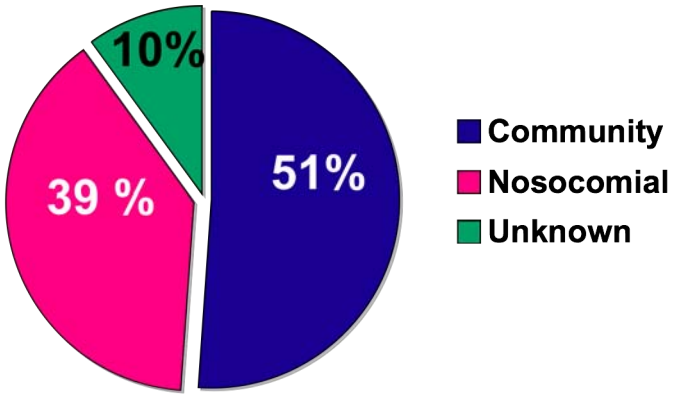
Type of infection

1 276 patients with antimicrobials



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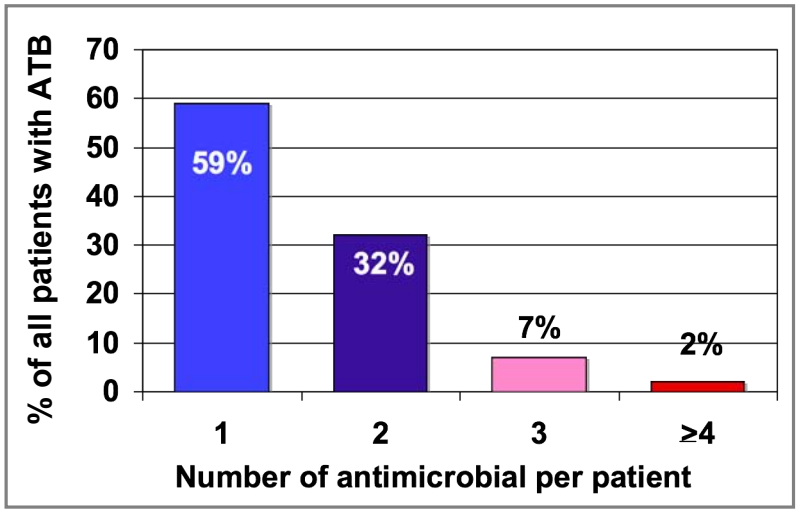
Combination of antimicrobials



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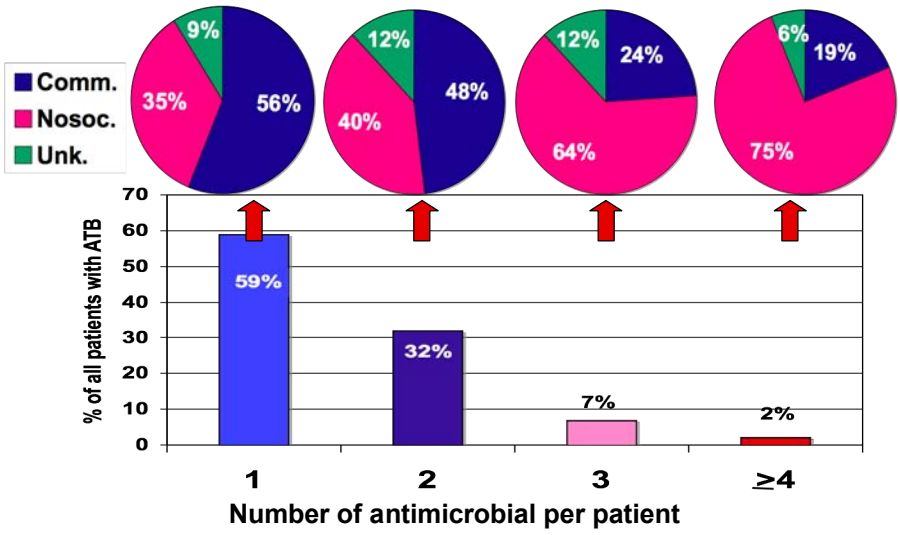
Combinations & type of infection



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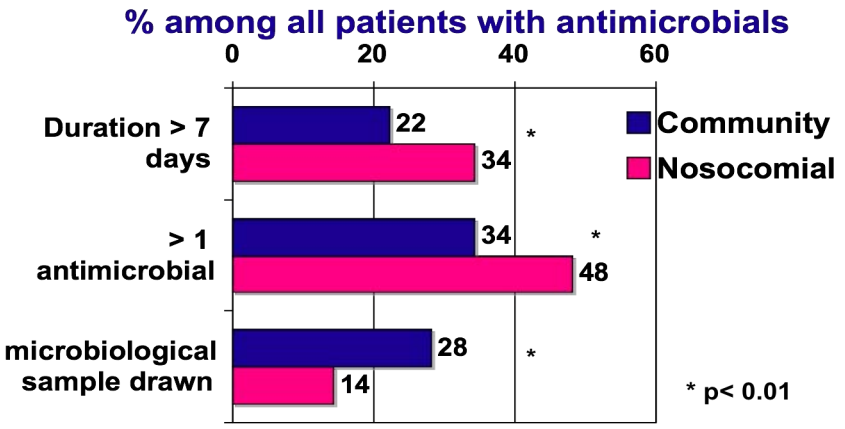
Treatment characteristics



Overall, 56 patients (4.4%): no microbiological sample
AND
treatment > 7 days

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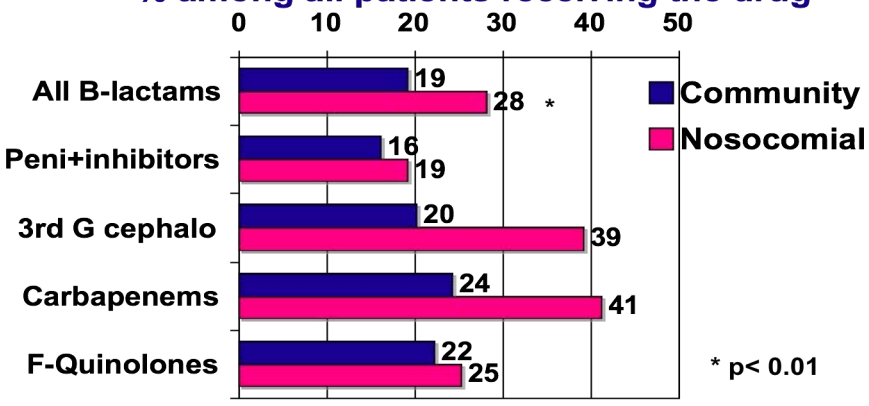
Duration of treatment > 7 days

(At the time of survey ⟷ minimal duration of treatment)



No statistical difference between ICUs and non-ICU wards regarding the duration of treatment

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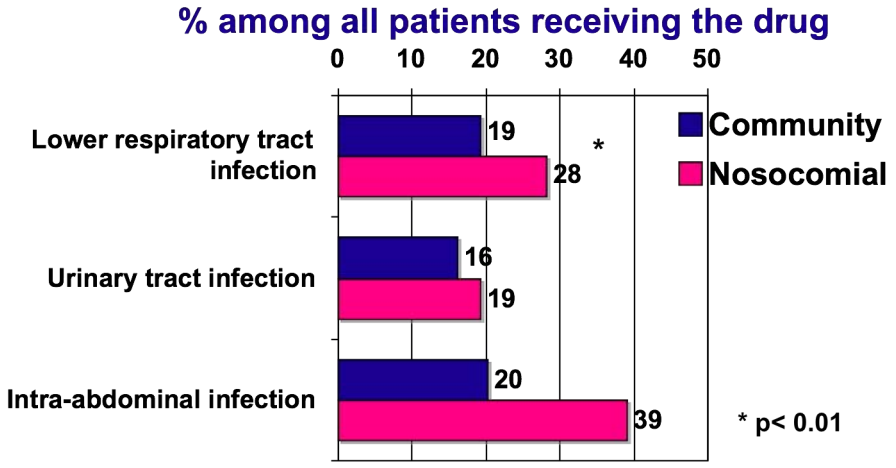
Duration of treatment > 7 days

(At the time of survey ⟷ minimal duration of treatment)



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Aminoglycosides treatment

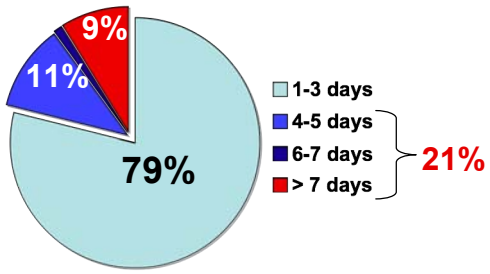
Among all patients with antibiotics, 8% had an aminoglycoside

- **6.8%** among patients with **community-acquired** infections
- **8.4%** among patients with **hospital-acquired** infections

(no statistical difference - p = 0.31)

Duration of treatment at the time of the survey

(At the time of survey ⟷ minimal duration of treatment)



Community vs Nosocomial

↓

no statistical difference in duration of treatment

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Multidrug-resistant bacteria (MDR)

- **Among 1 194 strains isolated : 82 MDR (6,5 %)**

Treatment received	MDR +	MDR -
1 drug	40 %	60 %
> 1 drug	60 %	40 %

Median duration of treatment on the day of survey
MDR + ➔ 9 j
MDR - ➔ 4 j | ***P <0.0001***

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Conclusions

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Despite a large amount of data

- **1/4 of community-acquired infections received**
  - **> 1 drug**
  - **and/or for a duration of > 7 days**
- **≈ 5 % of inpatients treated for « infection » :**
  - do not have any microbiological sample drawn
  - AND received > 7 days of antimicrobials
- **Surprisingly, there is no difference in the duration of treatment between ICUs and other wards**

A large campaign of education of the physician should be implemented in French hospitals

The role of a senior physician trained in antimicrobial therapy may be of interest, as recommended by the French Plan to Preserve Antibiotics

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