

EVALUATION OF THE APPROPRIATENESS OF PRESCRIBING OF PIPERACILLIN-TAZOBACTAM IN A TEACHING HOSPITAL

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Background

The increasing problem of bacterial resistance should encourage health care professionals to optimize anti-infective therapy in terms of antibiotic choice, dosage and therapy duration.

Objective

We propose to assess the appropriateness of prescribing of piperacillin-tazobactam (Tazocin®) at the Mont-Godinne teaching hospital, a 450-bed institution in Belgium.

Materials and methods

Prospective observational seven-week (from February 21st to April 10th, 2011) study. All patients receiving the piperacillin 4g-tazobactam 0.5g combination were enrolled. Several data (patient name, care unit, indication of piperacillin-tazobactam, prescribed dosage, therapy duration, risk factors for nosocomial infections...) were collected by a pharmacist to complete an evaluation form. This form was then evaluated by an infectious disease specialist. The primary outcome measure was the appropriateness of indication, dosage and therapy duration according to local recommendations.

Results

Eighty-four patients were included for a total of 89 piperacillin-tazobactam prescriptions. Two thousand seven hundred and sixty-four doses were delivered by the pharmacy during the study period.

The most common indication was the treatment of respiratory tract infections (42%).

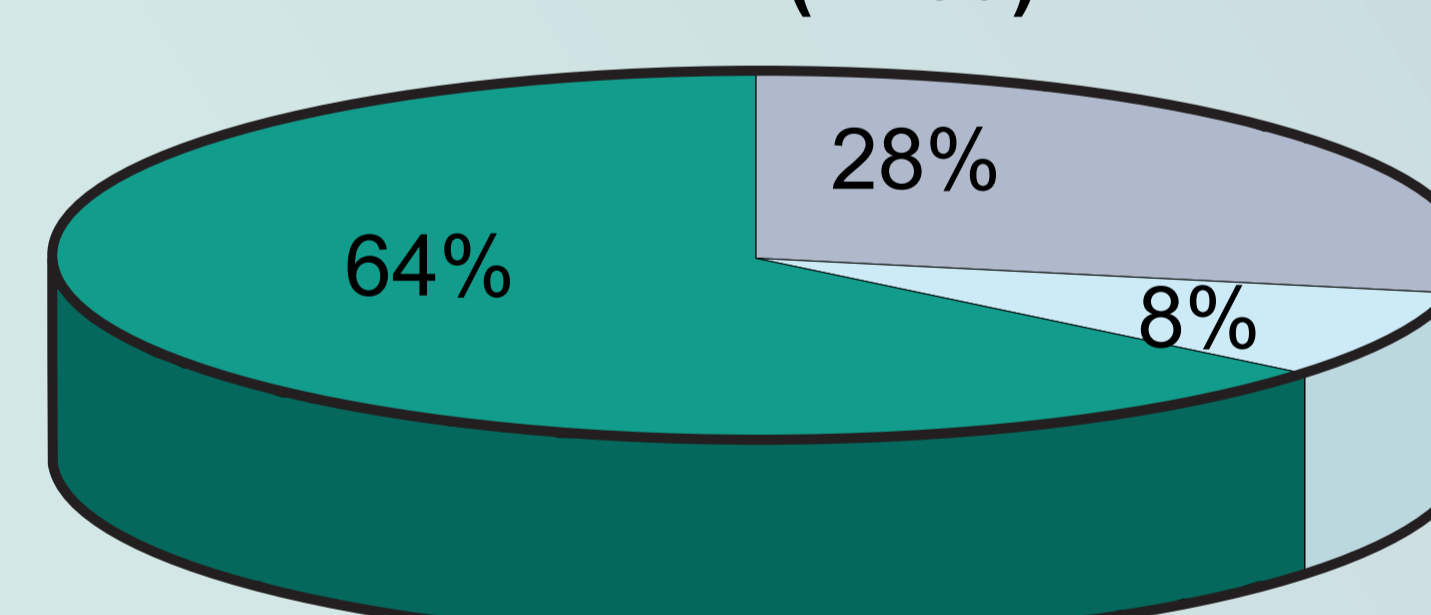
Overall, 57 prescriptions were evaluated as adequate for the three criteria (indication, dosage and duration), 25 were inadequate for at least one criterion and 7 were debatable (Figure 1).

Among inadequate cases, 7 were due to prolonged treatment durations (up to 8 extra days), representing 28 days of unnecessary treatment, ie 102 extra doses of piperacillin-tazobactam (=1.314€).

The remaining 18 inadequate cases were due to inappropriate indications, representing 515 extra doses of piperacillin-tazobactam. The analysis revealed that 9 cases required no antibiotherapy. For the other 9, the choice of piperacillin-tazobactam was inappropriate (Figure 2).

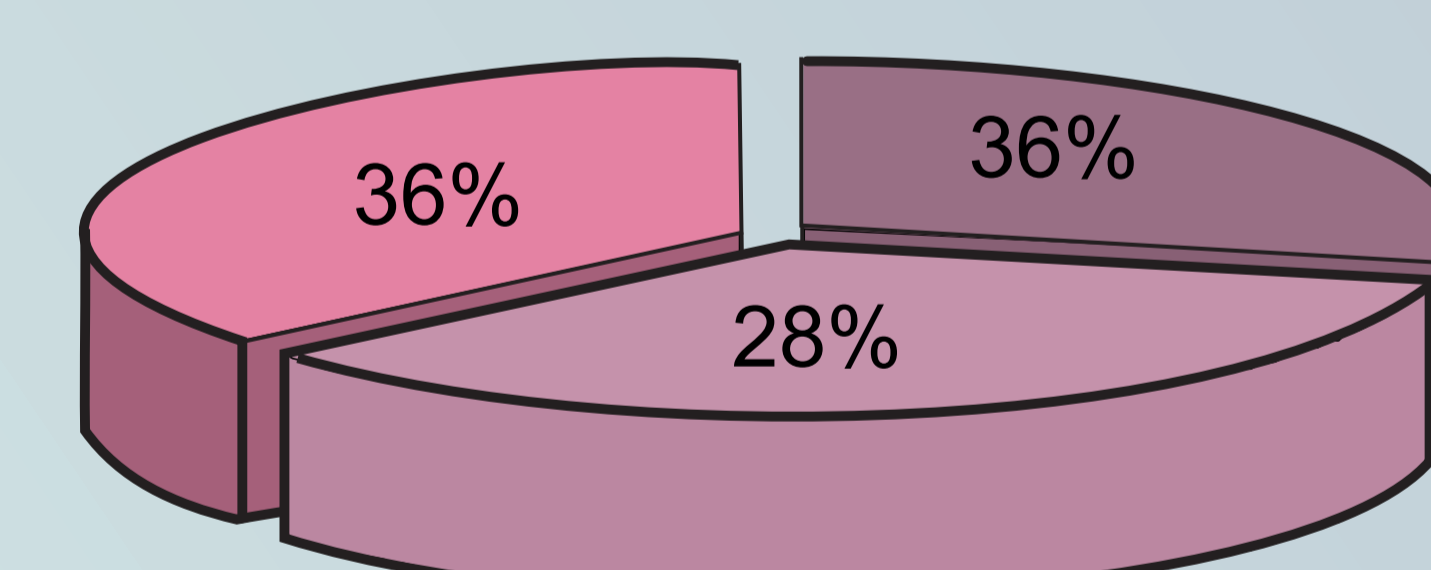
Inadequate dosages were not observed.

Fig 1.
Overall appropriateness of Tazocin treatments (n=89)



- Adequate (n=57)
- Inadequate (n=25)
- Debatable (n=7)

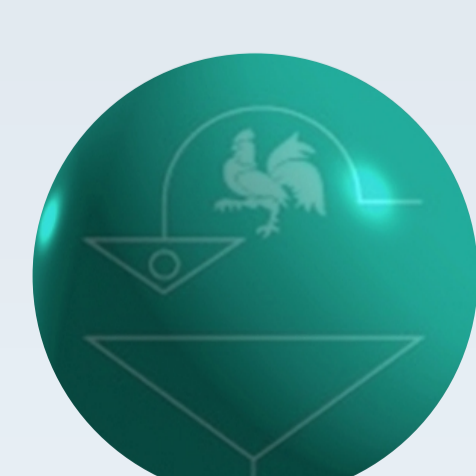
Fig 2.
Evaluation of Inadequate treatments (n=25)



- Antibiotic not necessary (n=9)
- Inappropriate antibiotic (n=9)
- Prolonged durations (n=7)

Conclusion

This study showed that inappropriate indications of piperacillin-tazobactam affect one in five doses (19%) delivered by the pharmacy. Including inappropriate durations, the percentage of unjustified doses rises to 22%, representing therefore potential cost savings. Continued efforts aiming at promoting respect of local recommendations are still needed in order to reduce the incidence of bacterial resistance and generate substantial savings.



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Conflict of interest
None