

## ATC code : J01- Antibacterials For Systemic Use

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### OBJECTIVES

- To judge the **degree of conformity** of tigecycline prescriptions with the **Marketing Authorization (MA)** criteria ;
- To evaluate the **circumstances** when this antibiotic was used ;
- To define **its place in the therapeutic strategy** of the Tunisian military hospital.

### STUDY DESIGN

**Study type:** A retrospective study.

**Period :** From 1<sup>st</sup> January 2013 to 31 December 2014 (2 years = 24 months).

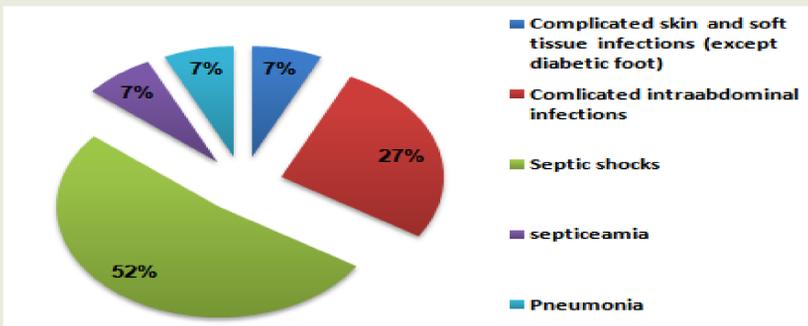
**Patients :** 29 Patients hospitalized in the medical intensive care unit (ICU) of our hospital and treated with tigecycline.

**Data collection :** was realized using patients' medical files and prescriptions.

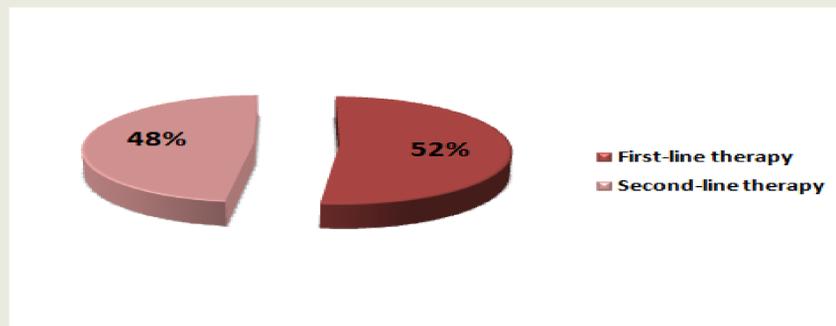
### RESULTS

- The majority of them were men (**sex-ratio (M/F) = 2.22**)
- Mean age was **52 (range 22-82)**.

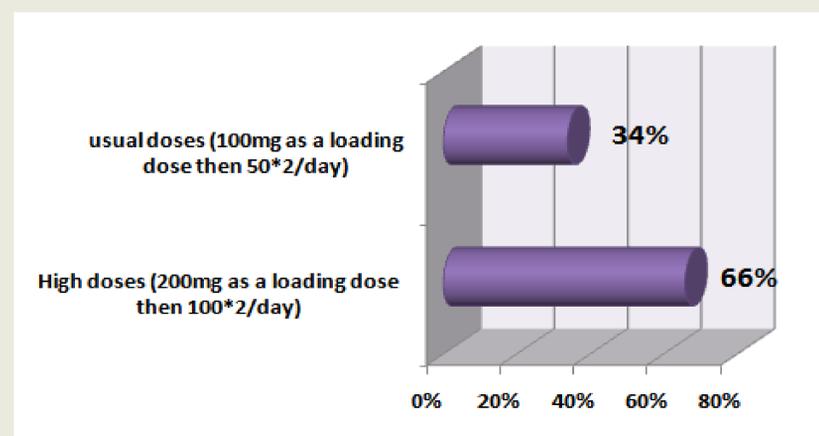
The MA criteria allow Linezolid for **complicated skin and soft tissue infections (except diabetic foot)** in addition to **complicated intraabdominal infections**.



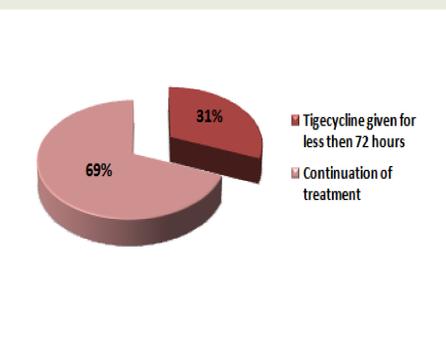
**Figure 1:** Indications for linezolid



**Figure 2:** Place of linezolid in the therapeutic strategy



**Figure 3 :** Prescribed dosages



**Figure 4:** Continuation or termination of treatment by tigecycline

**Sixty two per cent** of infections were documented microbiologically, of which 39% were caused by *Klebsiella pneumoniae*.

| Microorganism isolated              | Total of patients (n = 29) |
|-------------------------------------|----------------------------|
| <i>Klebsiella pneumoniae</i>        | 7 (39)                     |
| <i>Acinetobacter baumanii</i>       | 6 (33)                     |
| <i>Enterobacter cloacae</i>         | 1 (6)                      |
| <i>Enterococcus gallinarum</i>      | 1 (6)                      |
| <i>Enterococcus faecum</i>          | 1 (6)                      |
| <i>Morganella Morganii</i>          | 1 (6)                      |
| <i>Stenotrophomonas maltophilia</i> | 1 (6)                      |
| Not documented                      | 11 (38)                    |

Microorganisms isolated from patients treated with tigecycline

- Data are n (%) of patients.

### DISCUSSION

- Our results add to the evidence indicating that tigecycline is an **interesting therapeutic alternative** in case of infections due to multi-resistant bacteria and/or complex clinical situations.
- Its prescription must be rationalized in order to slow down the emergence of resistance.
- The association of tigecycline with other antibiotics has concerned no documented infections where many microorganisms were suspected and vital prognosis was threatened.
- Since January 2015, our hospital started the implementation of the **'Antimicrobial Stewardship' program**.
- Applied in Europe for more than five years, the program 'Antimicrobial stewardship' has just started to be applied at the Tunisian military hospital. This hospital is the first to apply this strategy in Tunisia.
- Validated prescriptions were created. These prescriptions require approval by an infectious-disease physician in order to provide antibiotics.

### CONCLUSIONS

- No case of resistance to tigecycline has been reported since the beginning of its prescription at the Tunisian military hospital .
- The important number of prescriptions outside the MA criteria should encourage researchers to carry out more clinical trials to prove the authenticity of its use for these indications.
- As part of the implementation of the 'Antimicrobial Stewardship' strategy, an effective collaboration between clinicians, microbiologists and pharmacists will guarantee the proper use of this antimicrobial agent.
- Subsequent studies will show the impact of this strategy on antibiotic use and on the management of bacterial resistance in our institution.

### ACKNOWLEDGMENTS

None.