

CONSUMPTION OF WATCH AND RESERVE ANTIBIOTICS: A RETROSPECTIVE STUDY IN INTENSIVE CARE UNITS

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Introduction

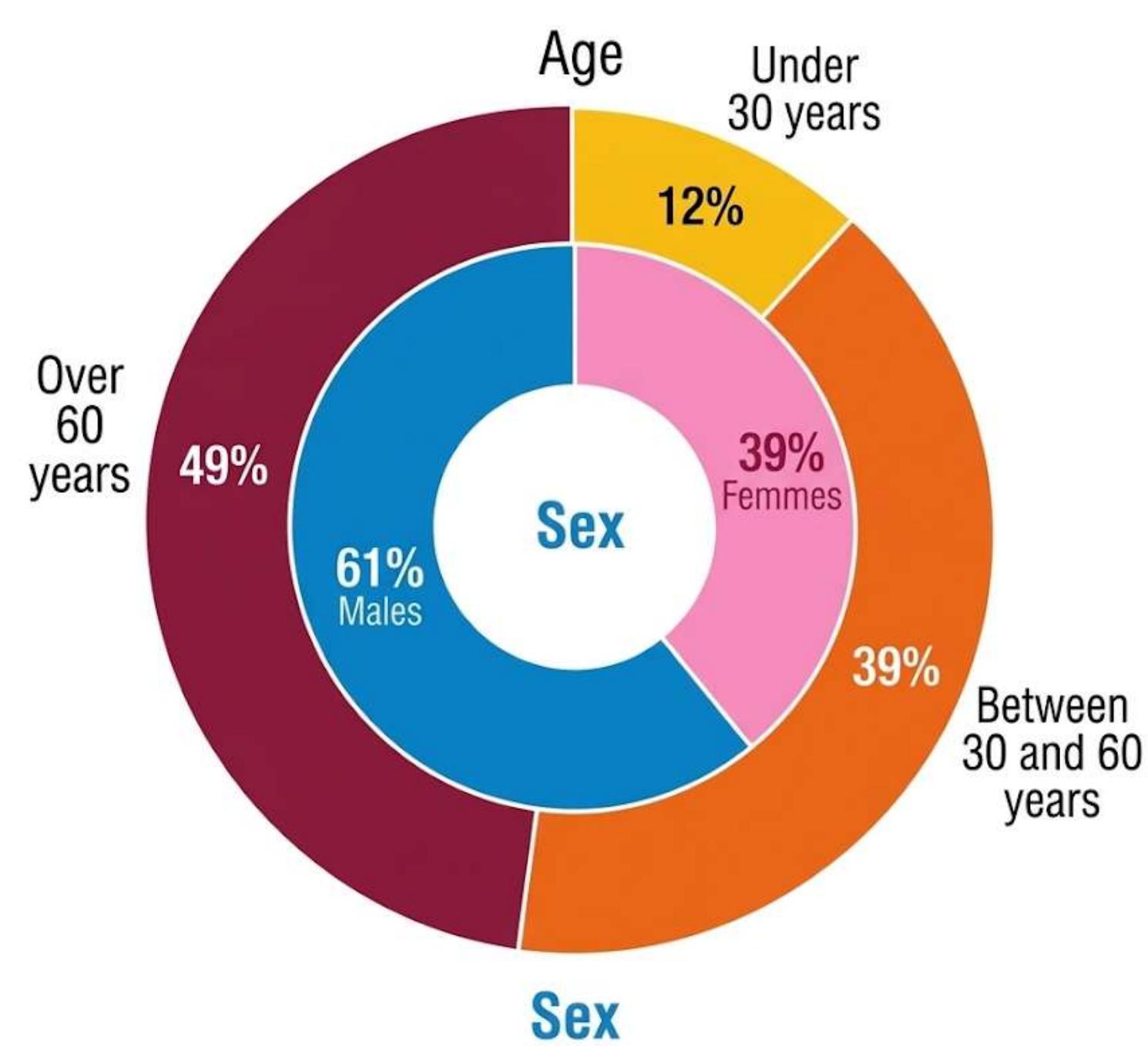
Excessive consumption and misuse of broad-spectrum antibiotics represent a major public health concern due to their role in the emergence of bacterial resistance, particularly in hospital settings. In this context, controlling antimicrobial use and preserving their effectiveness are crucial. The objective of this study was to evaluate the consumption of antibiotics belonging to the WHO WATCH and RESERVE groups in intensive care units.

Materials and Methods

This retrospective study was conducted over a three-month period from January to March 2023. It included all patients admitted to the intensive care units of an Hospital, Rabat, who received at least one prescription of an antibiotic belonging to the WATCH or RESERVE categories.

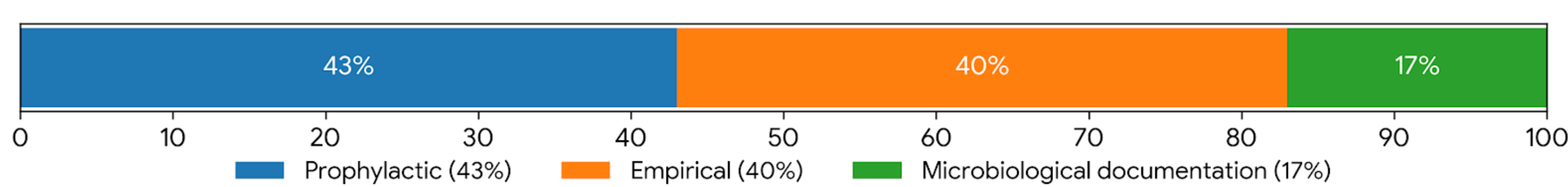
Results and discussion

- Analysis of **263** prescriptions across 3 ICUs.
- **Demographic distribution of patients by sex and age:**



- Mean length of stay: 53 days; Mean occupancy rate: 59%; Global mortality rate: 2%.

- **Distribution of Antibiotic Prescriptions by Clinical Purpose:**

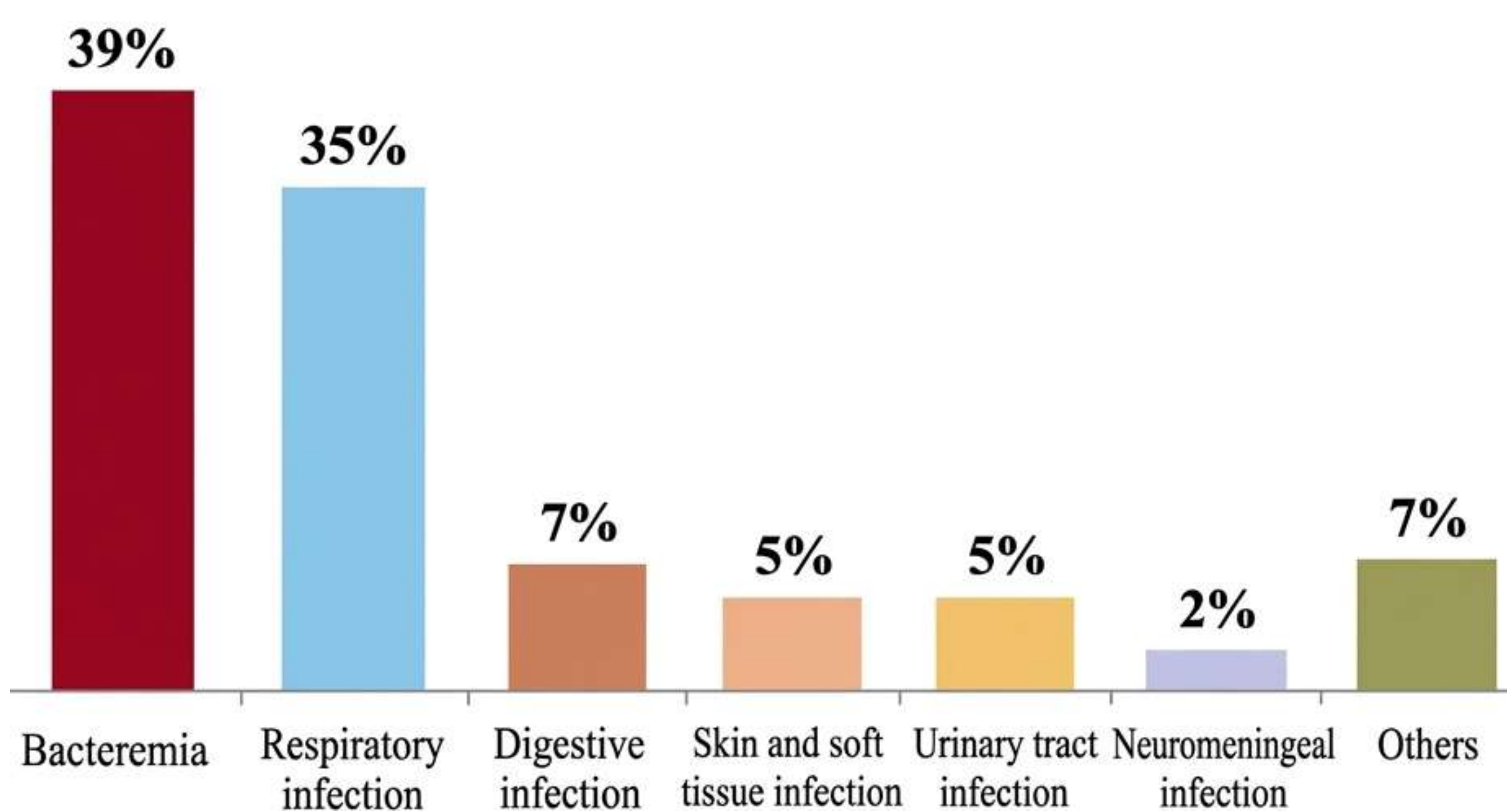


Prophylaxis was the leading indication:

High Empiric therapy levels reflect standard ICU management for severe infections ; the mean treatment duration was 5.5 days.

- **Need:** Improve microbiological documentation to transition from broad-spectrum to targeted therapy.

- **Proportional Distribution of Identified Infectious Sites:**



- **Bacteremia** : Leading indication, likely linked to high rates of invasive monitoring and catheter use in ICU patients.
- **Respiratory Infections**: Strongly correlated with intubation and mechanical ventilation, aligning with global ICU data.

References:

(1):Zarrouki Y. Consommation des antibiotiques en réanimation [Thesis]. Marrakech: Université Cadi Ayyad, Faculté de Médecine et de Pharmacie; 2009.

(2):Mennis N. Consommation des antibiotiques au service de réanimation A1 [Thesis]. Fès: Université Sidi Mohamed Ben Abdellah, Faculté de Médecine et de Pharmacie; 2019.

- **Microbiological Profile of the Unit:**

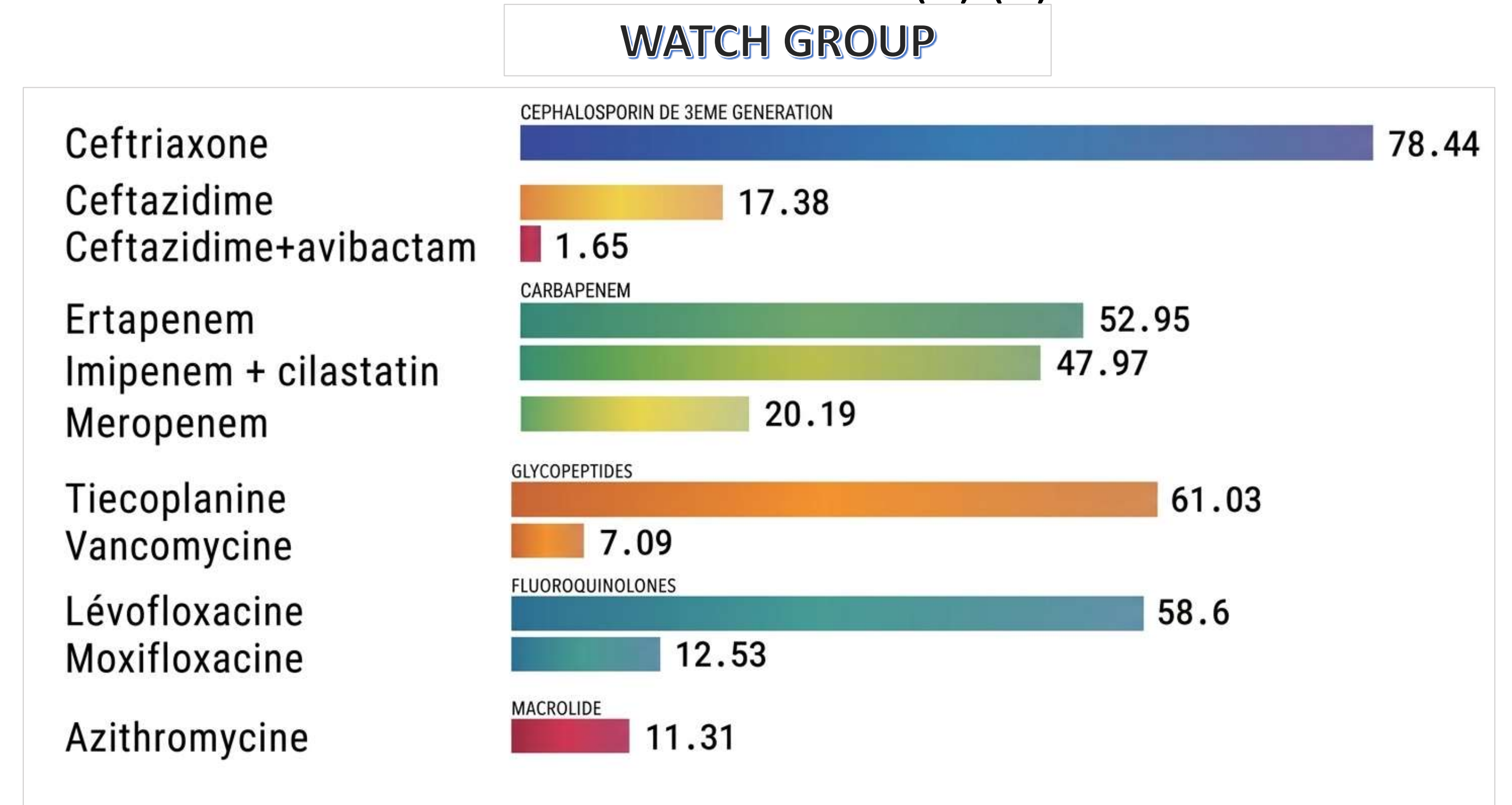
-157 bacteria were identified.

-**Acinetobacter baumannii** being the most frequently isolated.

Bacteria	Percentage
<i>Acinetobacter baumannii</i>	18%
<i>Escherichia coli</i>	16%
Coagulase-negative staphylococcus	14%
<i>Klebsiella pneumoniae</i>	14%
<i>Pseudomonas aeruginosa</i>	9%

- **Antibiotic consumption of the Watch and Reserve groups in DDD/1000 patient-days (DDD/PD):**

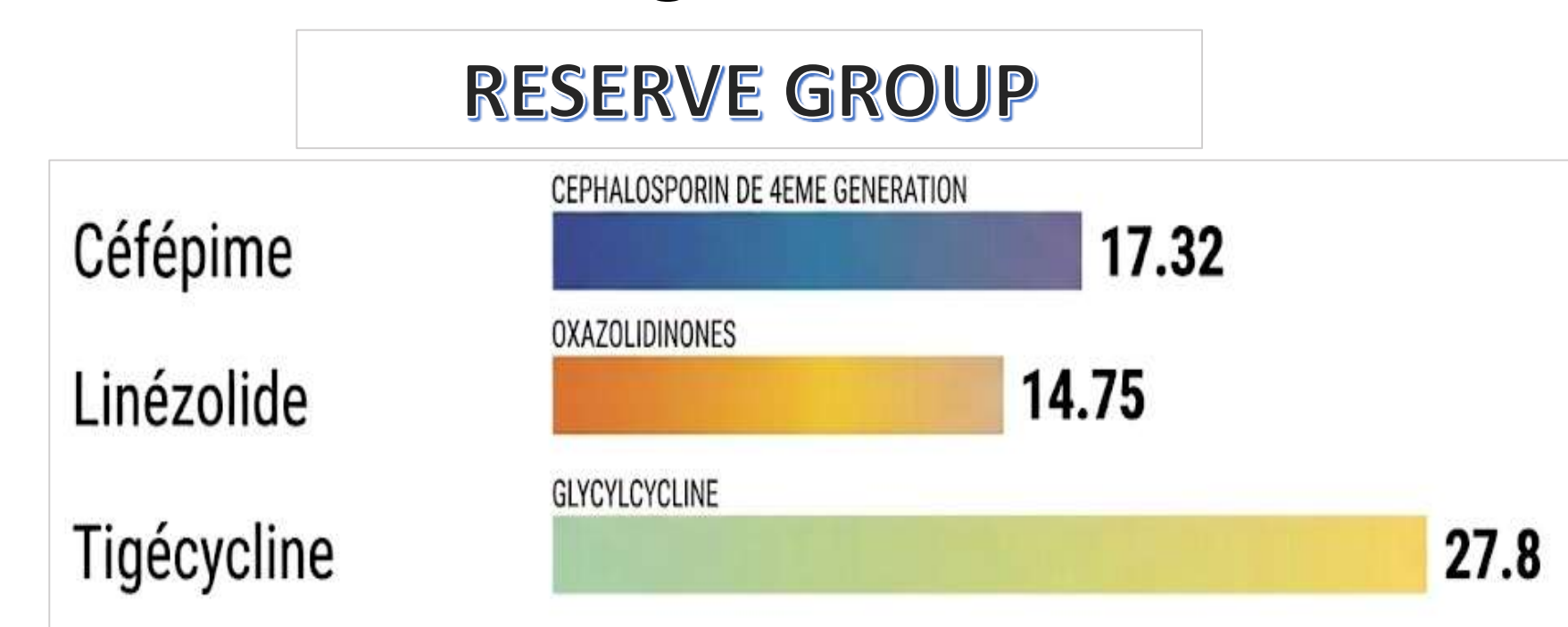
-**Overall Utilization:** Cumulative consumption for the two primary groups reached **435 DDD/PD**, a result consistent with findings from other Moroccan intensive care studies (1) (2).



-**Carbapenems:** Consumption peaked at **121 DDD/PD**, exceeding the figure of 107 reported in a previous study of ICUs in Marrakech (1).

-**Cephalosporins:** Consumption was equally high, recorded at **114.8 DDD/PD**.

-**Class Predominance:** The high carbapenem and cephalosporins consumption can be attributed to the local microbiological profile, as isolates often exhibit resistance to alternative agents. However, this intensive use of broad-spectrum therapy may inadvertently drive the selection of multidrug-resistant strains.



-**The RESERVE Group Paradox:** Despite high WATCH group consumption, the relatively lower use of RESERVE antibiotics suggests remaining therapeutic windows before total resistance; however, intensified surveillance is crucial to preserve these last-resort options.

Recommendations for Practice

Stewardship: Implement evidence-based protocols and systematic de-escalation.

Diagnostics: Prioritize rapid testing to ensure early targeted therapy.

Surveillance: Monitor local resistance trends to guide empirical prescribing.

Education: Conduct continuous training on antimicrobial rational use.