

# BUDGETARY IMPACT OF AZTREONAM SHORTAGE IN THE TREATMENT OF METALLO-BETA-LACTAMASE-PRODUCING GRAM-NEGATIVE BACTERIA

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## BACKGROUND AND IMPORTANCE

Metallo-beta-lactamases --> the most clinically significant acquired carbapenemases --> hydrolyze  $\beta$ -lactam antibiotics, except aztreonam and cefiderocol.

Since April 2024 --> aztreonam shortage

The national medicines and healthcare products agency (MHPA) established strict prioritization criteria for its use.

Aztreonam can only be employed in the context of metallo-beta-lactamases when cefiderocol cannot be used.

## AIM AND OBJECTIVES

To estimate the budgetary impact of the aztreonam shortage in a medium-complexity hospital under different scenarios.

## MATERIAL AND METHODS

Economic Evaluation of Ceftazidime-Avibactam + Aztreonam (CAZAVI-AZ) Treatment



Medium-complexity hospital

Study Period: January 2019 - December 2023

Data Source: Electronic health records



Patient Identification:

Criteria: Infected and/or colonized with metallo-beta-lactamases

Treatment: CAZAVI-AZ

### Key Calculations:

→ Incidence Rate: Based on hospital's served population

→ Median Treatment Duration: Measured in days

### Cost Analysis:

→ Treatment Costs:

Calculated using Laboratory-Reported Selling Prices (LRSP)

→ Budgetary Impact:

6 months

Periods Analyzed

1 year

2 years

Comparison: Standard doses of CAZAVI-AZ vs. Cefiderocol (cefiderocol costs minus CAZAVI-AZ costs)

### Sensitivity Analysis:

Variable: Maximum doses of CAZAVI-AZ for this indication

## RESULTS

### Cost and Budgetary Impact of CAZAVI-AZ vs. Cefiderocol

Annual Incidence: 8.8 cases per 100,000 inhabitants

Median Treatment Duration: 6.8 days [IQR 1.5–10.4]

### Laboratory-Reported Selling Prices (LRSP) per Vial:



Cefiderocol: €161.82

Aztreonam: €14.83

Ceftazidime-Avibactam: €125.42

### Total Cost per Patient:

CAZAVI-AZ: €3,163.53

→ Standard Doses: Cefiderocol: €6,602.05

→ Maximum Doses: CAZAVI-AZ: €3,365.22

### Budgetary Impact:

Annual Population Served: 170,000



### Periods Analyzed:

#### 6 Months:

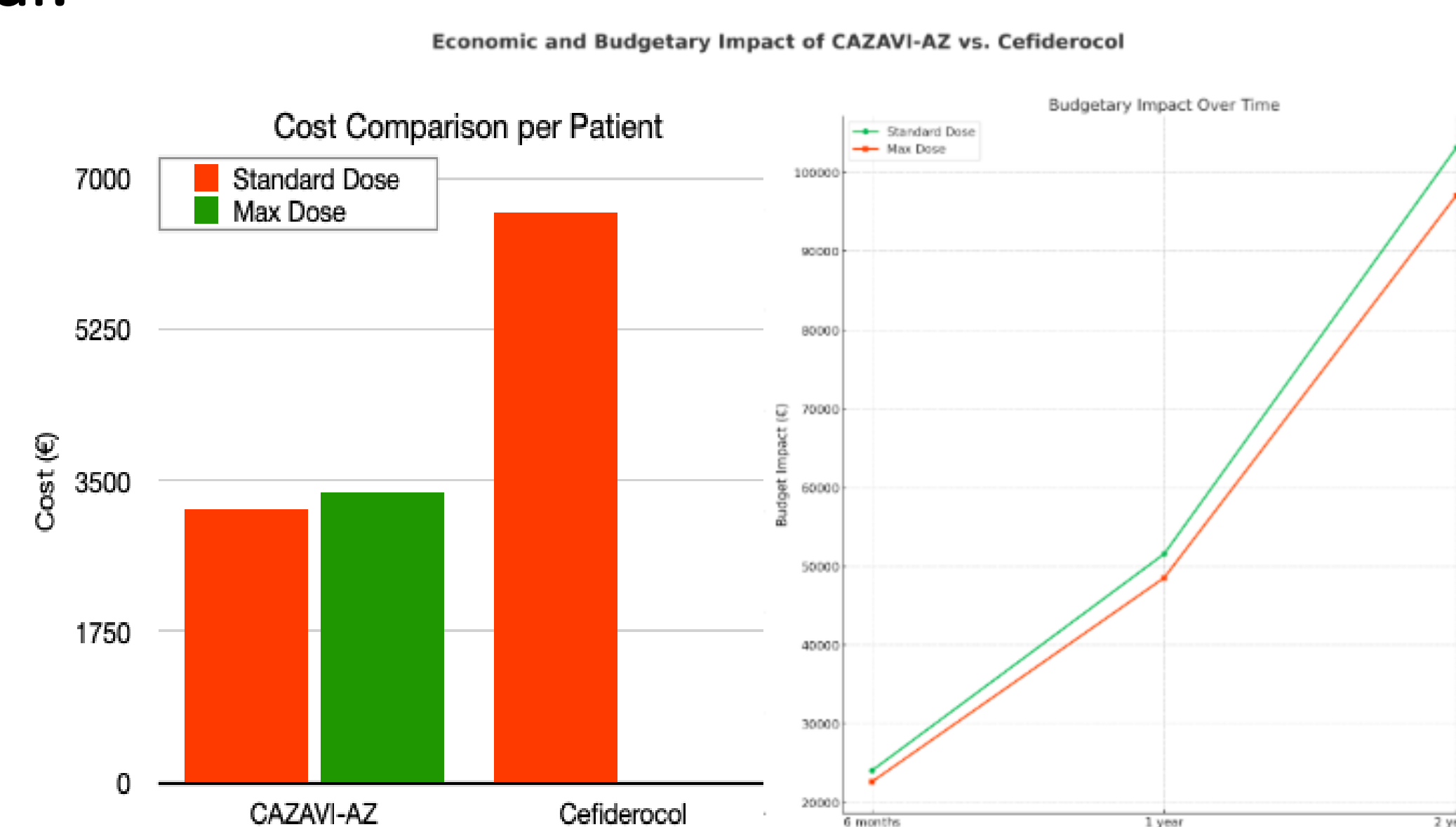
€24,069.64 (standard doses)  
€22,657.81 (maximum doses;  
5.87% lower)

#### 1 Year:

€51,577.83 (standard doses)  
€48,552.45 (maximum doses)

#### 2 Years:

€103,155.66 (standard doses)  
€97,104.90 (maximum doses)



## CONCLUSION AND RELEVANCE

The aztreonam shortage and high cefiderocol cost will significantly impact the treatment budget for metallo-beta-lactamase-producing gram-negative bacterial infections.

The estimated annual impact was €51,577.83.

The importance of ensuring aztreonam supply and managing shortages effectively. Beyond the economic impact, it is crucial to assess the ecological consequences of the MHPA's strategy.

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