



Experience with ceftaroline for treatment of MRSA pneumonia in a community hospital



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Introduction :

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a leading cause of hospital-acquired pneumonia (HAP) and ventilator associated pneumonia (VAP). Ceftaroline is the first cephalosporin with activity against MRSA approved in the USA for the treatment of community-acquired bacterial pneumonia (CABP) and acute bacterial skin and skin-structure infections. Ceftaroline is currently not approved for treatment of MRSA pneumonia. We describe our experience with the use of ceftaroline for this indication.

Methods:

A retrospective chart review was conducted in patients who received ceftaroline (January 2014-March 2016) for treatment of CABP, HAP and VAP due to MRSA with or without bacteremia.

Clinical success was defined as the resolution of signs and symptoms of infection at the end of ceftaroline therapy.

Treatment failure was defined as persistent signs and symptoms of infection at the end of ceftaroline therapy, death that could be attributed to ongoing infection or adverse drug reaction requiring cessation of ceftaroline treatment.

Indeterminate outcomes were defined as those lost to follow-up and death from causes other than pneumonia.

Results:

Patient characteristics and comorbidities are summarized in table 1.

Twenty-five (81%) patients had a diagnosis of HAP, 6 (19%) CABP and none of the patients had VAP.

Nineteen (62%) patients had clinical success, 6 (19%) patients had failure and 5 (16%) patients had indeterminate outcomes. There were 6 (19%) deaths, 5 of which were related to infection. Of the 11 patients with concomitant bacteremia, 6 (55%) were clinical successes, 4 (36%) were failures and 1 (9%) was indeterminate.

Table 1:

Characteristics	N (%)
Age (years)	72 (35 – 94)
Median (range)	69.6
Mean	
Sex	22 (71)
Male	09(29)
Female	
Race	11 (35)
Hispanic	20 (65)
Non-Hispanic	
Co-morbidity	03 (09)
Malignancy	11 (35)
Chronic lung disease	16 (52)
Diabetes-mellitus	05 (16)
Renal failure	01 (03)
Liver failure	02 (06)
Heart disease	02 (06)
Immunosuppression/AIDs	
Outcomes	19 (62)
Clinical Success	06 (19)
Death	25.6
Hospital length of stay (days, mean)	12
ICU length of stay (days, mean)	03 (09)
30-day readmission	

Conclusion:

Ceftaroline is a promising new treatment for MRSA pneumonia with a good safety profile. The results of our study compare favorably to previously published success rates with currently approved therapy. Limitations of our study include its retrospective nature from a single institution and the confounding effects of prior and concurrent antibiotics on outcome. Large prospective trials are indicated to establish the role of ceftaroline in treatment of MRSA pneumonia.

Reference:

van Hal SJ, Lodise TP, Paterson DL. The clinical significance of vancomycin Minimum Inhibitory Concentration in *Staphylococcus aureus* infections: a systematic review and meta analysis. *Clin Infect Dis*. 2012 Mar;54(6) : 755-71.