

Clinical trials in CAP

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E
R

During hospitalization



Improvement

Non-resolving
pneumonia

Failure

T0

T1

T2

T3

T4

T5

T6

T7

Different clinical or logistical questions may require different definitions

- **Microbial etiology**
- **Possibility of benefit from specific or supportive therapy**
- **Probability of morbidity or mortality**

**Most commonly the question of location of
care has been the central problem of
CAP severity**

ETIOLOGY

- SCAP has a somewhat distinct microbial etiologic predominance from CAP, with a higher representation of *Staphylococcus aureus* and Gram-negative organisms
- Unfortunately, the inciting organism may be independent of the actual physiologic severity of CAP, as with the pneumococcus, which is heavily represented in both severe and non-severe CAP.

Risk for MDR pathogens

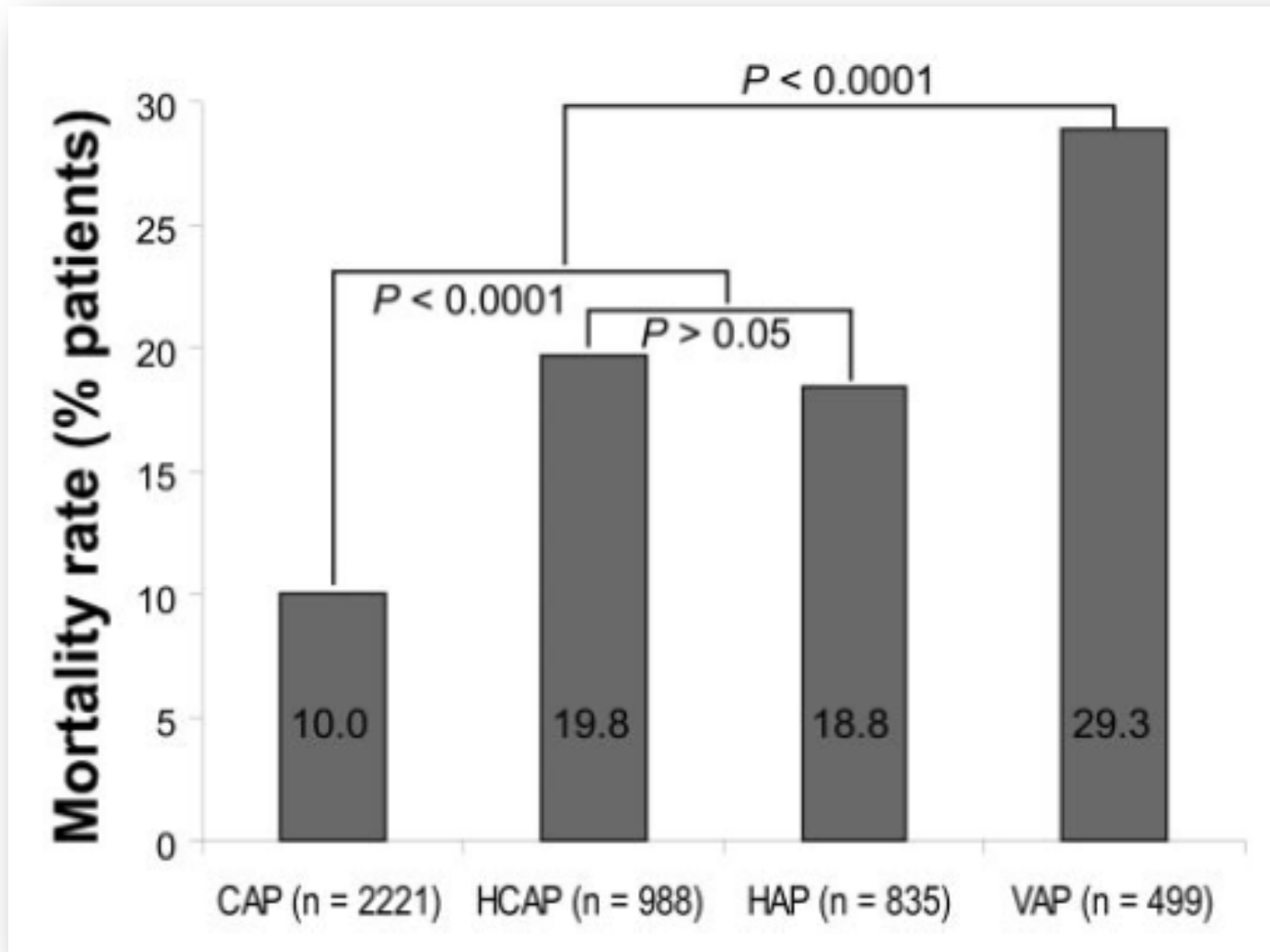
CAP

- Patient hospitalized in an acute care hospital for two or more days within 90 days of the infection
- Patient resided in a nursing home or long-term care facility
- Patient received recent IV antibiotic, chemotherapy, or wound care within the past 30 days of the current infection
- Patient attended a hospital or hemodialysis clinic

HAP

Morbidity and Mortality

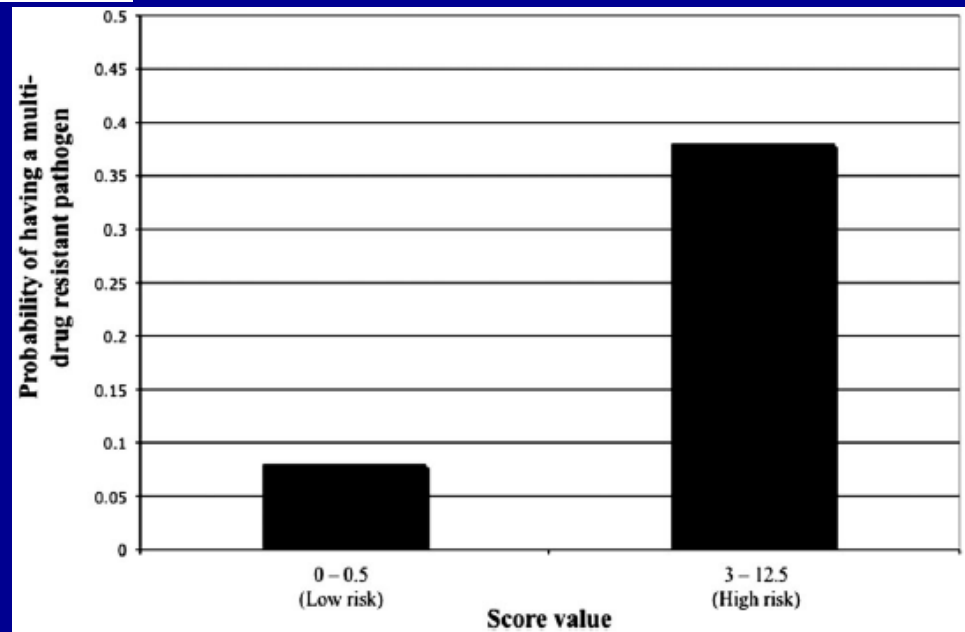
Mortality



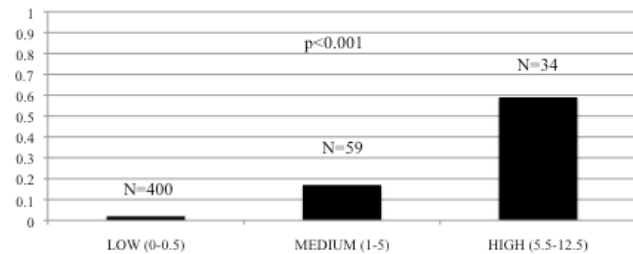
Marin H. Kollef, Andrew Shorr, Ying P. Tabak, Vikas Gupta, Larry Z. Liu, and R. S. Johannes. Epidemiology and Outcomes of Health-care-Associated Pneumonia: Results From a Large US Database of Culture-Positive Pneumonia. *Chest* 128 (6):3854-3862, 2005

Stratifying Risk Factors for Multidrug-Resistant Pathogens in Hospitalized Patients Coming From the Community With Pneumonia

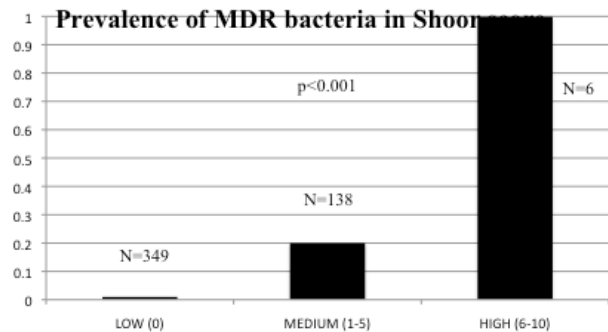
Variable	Score
No risk factors for MDR pathogen (including comorbidities)	0
≥1 of the following: cerebrovascular disease, diabetes, COPD, antimicrobial therapy in preceding 90 days, immunosuppression, home wound care, home infusion therapy (including antibiotics)	0.5
Residence in a nursing home or extended-care facility	3
Hospitalization for ≥2 days in the preceding 90 days	4
Chronic renal failure	5



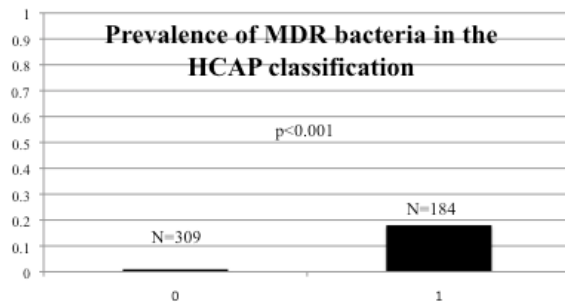
Prevalence of MDR bacteria in the Aliberti score



Prevalence of MDR bacteria in Shoon



Prevalence of MDR bacteria in the HCAP classification



group	N	% MDR pathogens
0	667	0.3%
0.5	337	2.1%
3-4	254	3.1%
5 or more	90	5.6%

Performance of the MDR score.

Area under the curve 0.75 (95% CI 0.69-0.81), $p < 0.0001$



Clinical Prediction Rules

- **PSI and CURB-65 (in various versions) have demonstrated utility in recommending outpatient therapy for low-risk patients.**
- **These two models do not perform well at predicting which patients will require ICU admission or intensive therapy**
- **They tend to overestimate severity in patients with advanced age or chronic organ failure and underestimate severity in younger patients**

Low CURB-65 is of limited value in deciding discharge of patients with community-acquired pneumonia[☆]

Stefano Aliberti ^{a,*}, Julio Ramirez ^b, Roberto Cosentini ^c, Anna Maria Brambilla ^c, Anna Maria Zanaboni ^d, Valeria Rossetti ^e, Paolo Tarsia ^e, Paula Peyrani ^b, Federico Piffer ^e, Francesco Blasi ^e

Respiratory Medicine (2011) 105, 1732–1738

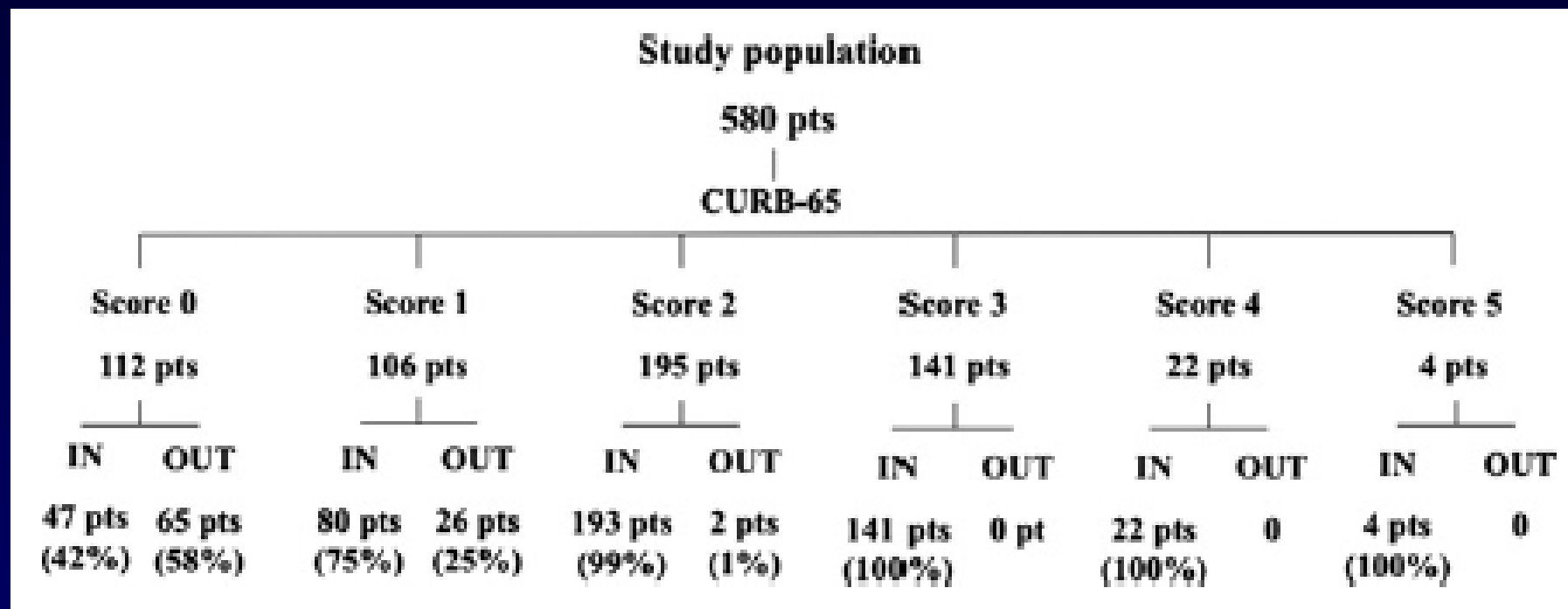


Table 3 Reasons that justified hospitalization among patients with a CURB-65 score of 0 or 1.

Reasons	N. (%)
1. Hypoxemia	36 (35)
2. Failure of outpatient therapy	15 (14)
3. Cardiovascular events	10 (9.7)
4. Further Work-up	8 (7.8)
5. Neurological events	7 (6.7)

Association Between Time to Clinical Stability and Outcomes After Discharge in Hospitalized Patients With Community-Acquired Pneumonia

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CHEST 2011; 140(2):482–488

