Target Trial Emulation of Empiric Antibiotics on Clinical Outcomes in Moderately Immunocompromised Patients Hospitalized with Pneumonia

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IDSA

Target Trial Emulation

Does empiric broad-spectrum antibiotic treatment impact mortality or other clinical outcomes in moderately immunocompromised patients without risk factors for multidrug-resistant organisms hospitalized with community-acquired pneumonia?

Moderately immunocompromised patients enrolled

(n=2,706)

59% received empiric broad-spectrum antibiotics (n=1,596)
41% received empiric standard antibiotics (n=1,110)

Overall rate of MDROs 3.5%

No difference in mortality
adjusted hazard ratio 1.19
(95% CI 0.85-1.67)

5.4% (Mortality standard, n=60) VS **9%** (Mortality broad-spectrum antibiotic, n=144)

Moderately immunocompromised patients receiving empiric broad-spectrum antibiotics were more likely to be readmitted n=324 (20.8%) broad-spectrum antibiotics vs n=152 (13.8%) standard, adjusted hazard ratio 1.32 (95% CI 1.05-1.66), transferred to the ICU n=58 (3.6%) vs n=12 (1.1%), adjusted hazard ratio 2.65 (95% CI 1.32-5.30), have increased length of stay 6.22 (3.52) vs 5.29 (3.06), adjusted rate ratio 1.14 (95% CI 1.10-1.19). No differences in C. difficile infection, antibiotic-associated adverse events or 30-day post-discharge ED visits.

Empiric broad-spectrum antibiotic use for CAP in moderately immunocompromised patients without ATS/IDSA risk factors for MDROs may be associated with worse patient outcomes compared to standard empiric CAP coverage.