Children's Hospital of Philadelphia
PolicyLab

Variability in Antibiotic Prescribing for Community-Acquired Pneumonia

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BACKGROUND AND OBJECTIVES: Published guidelines recommend amoxicillin for most children with community-acquired pneumonia (CAP), yet macrolides and broad-spectrum antibiotics are more commonly prescribed. We aimed to determine the patient and clinician characteristics associated with the prescription of amoxicillin versus macrolide or broad-spectrum antibiotics for CAP.

METHODS: Retrospective cohort study in an outpatient pediatric primary care network from July 1, 2009 to June 30, 2013. Patients prescribed amoxicillin, macrolides, or a broad-spectrum antibiotic (amoxicillin–clavulanic acid, cephalosporin, or fluoroquinolone) for CAP were included. Multivariable logistic regression models were implemented to identify predictors of antibiotic choice for CAP based on patient- and clinician-level characteristics, controlling for practice.

RESULTS: Of 10 414 children, 4239 (40.7%) received amoxicillin, 4430 (42.5%) received macrolides and 1745 (16.8%) received broad-spectrum antibiotics. The factors associated with an increased odds of receipt of macrolides compared with amoxicillin included patient age ≥5 years (adjusted odds ratio [aOR]: 6.18; 95% confidence interval [CI]: 5.53–6.91), previous antibiotic receipt (aOR: 1.79; 95% CI: 1.56–2.04), and private insurance (aOR: 1.47; 95% CI: 1.28–1.70). The predicted probability of a child being prescribed a macrolide ranged significantly between 0.22 and 0.83 across clinics. The nonclinical characteristics associated with an increased odds of receipt of broad-spectrum antibiotics compared with amoxicillin included suburban practice (aOR: 7.50; 95% CI: 4.16–13.55) and private insurance (aOR: 1.42; 95% CI: 1.18–1.71).

CONCLUSIONS: Antibiotic choice for CAP varied widely across practices. Factors unlikely related to the microbiologic etiology of CAP were significant drivers of antibiotic choice. Understanding drivers of off-guideline prescribing can inform targeted antimicrobial stewardship initiatives.

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