

261. Alternative Antibiotic Prescribing for Community Acquired Pneumonia (CAP) in Pediatric Patients in Relation to Allergy Status

Ankita Desai, MD¹; Bhavana Gorti, MS²; Sherman Alter, MD³; Lilliam Ambroggio, PhD, MPH⁴; Daniel Cohen, MD⁵; Osama El-Assal, MD⁶; Todd Florin, MD, MSCE⁷; Meghan Keaton, MD⁸; Asuncion Mejias, MD, PhD, MsCS⁹; Richard Ruddy, MD⁴; Samir Shah, MD⁴; Rebecca Wallihan, MD⁵; Octavio Ramilo, MD, FPIDS⁵ and Children's Hospital Initiative for Research in Pneumonia (CHIRP); ¹Division of Pediatric Infectious Diseases, University Hospitals Cleveland Medical Center/ Rainbow Babies and Children's Hospital, Cleveland, Ohio, ²University Hospitals Cleveland Medical Center, Cleveland, Ohio, ³Dayton Children's Hospital, Dayton, Ohio, ⁴Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio, ⁵The Research Institute at Nationwide Children's Hospital, Columbus, Ohio, ⁶Akron Children's Hospital, Akron, Ohio, ⁷University of Cincinnati College of Medicine, Cincinnati, Ohio, ⁸ProMedica Toledo Children's Hospital, Toledo, Ohio

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Background. While 10% of the population may report a penicillin (PCN) allergy, it has been shown that 90% of these patients are not allergic and may still be able to take PCN safely. Inaccurate reporting of a PCN allergy may lead to prescription of other non-β-lactam or broader spectrum antibiotics. Inpatients with reported antibiotic allergy status have been shown to have inappropriate antibiotic prescribing, increase microbiologic resistance, and suboptimal patient outcomes. Our goal was to evaluate antibiotic prescribing patterns for children with CAP in the setting of reported antibiotic allergy.

Methods. The Children's Hospital's Initiative for Research in Pneumonia (CHIRP) study enrolled inpatient and outpatient children ≥2 months to 18 years of age with a diagnosis of CAP from six participating sites. Demographic data, allergy status, antimicrobial therapy, and clinical outcomes were collected. Overall prevalence of reported antibiotic allergy and alternative therapy used in setting of reported allergy were analyzed.

Results. A total of 470 subjects were included, enrolled from October 2015 to December 2017. The mean age was 6.3 years (range: 3 months to 18.9 years), 45% were females. Sixty-three (13.4%) subjects self-reported one or more antibiotic allergies. Twenty-seven subjects reported amoxicillin (AMOX) allergy, nine with PCN allergy, nine with amox/clavulanate (AMOX/CLAV) allergy, and 11 with ampicillin (AMP) or ampicillin/sulbactam allergy. Cephalosporin allergy was reported in seven subjects. Of the 47 subjects who reported AMOX or AMP allergy, 37 (79%) were treated with ceftriaxone, a broad-spectrum agent. In the 47 subjects with reported AMOX or AMP allergy, five (10.6%) were prescribed AMOX at discharge. Of the three subjects with reported levofloxacin allergy, two were treated with levofloxacin during hospitalization for CAP as well as at the time of discharge.

Conclusion. Most subjects with reported AMOX allergy were treated with alternative and broader-spectrum antibiotics. In our cohort, 10.6% still received the antibiotic despite the allergy labeling. Better confirmation of allergy history to hone appropriate antimicrobial therapy appears to be indicated.

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262. Pediatric Antibiotic Use in the Duke Antimicrobial Stewardship Outreach Network

Michael Smith, MD, MSCE¹; Elizabeth Dodds Ashley, PharmD, MHS, FCCP, BCPS²; Deric J. Anderson, MD, MPH, FIDSA, FSHEA³; April Dyer, PharmD, MBA, MSCR, BCPS⁴; Travis Jones, PharmD⁵; Melissa Johnson, PharmD, MHS⁶; Angelina Davis, PharmD, MS, BCPS, AQ-ID⁶ and Rebekah W. Moehring, MD, MPH⁷; ¹Pediatric Infectious Diseases, Duke University, Durham, North Carolina, ²Duke University, Durham, North Carolina, ³Duke Center for Antimicrobial Stewardship and Infection Prevention, Durham, North Carolina, ⁴Duke Antimicrobial Stewardship Outreach Network (DASON), Durham, North Carolina, ⁵Medicine, Duke University School of Medicine, Durham, North Carolina, ⁶Infectious Diseases, Duke Antimicrobial Stewardship Outreach Network (DASON), Duke University, Durham, North Carolina, ⁷Division of Infectious Diseases, Duke University Medical Center, Durham, North Carolina

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Background. The Duke Antimicrobial Stewardship Outreach Network (DASON) was established in 2013 to provide antimicrobial stewardship resources to community hospitals in the Southeast. Pediatric patients in community hospitals may benefit from antimicrobial stewardship program (ASP) activities.

Methods. Antibacterial use (AU) was reviewed using the DASON Antimicrobial Stewardship Assessment Portal, which includes filters for National Healthcare Safety Network (NHSN) unit types. We performed a retrospective review of AU in pediatric units from January 1 to December 31, 2017. AU was summarized by days of therapy (DOT) and percent of total DOT for specific unit types and agents. AU rates were reported by DOT/1,000 patient-days.

Results. A total of 41 pediatric units were included from the 28 hospital DASON cohort: 11 Neonatal Critical Care or Step Down Nurseries, eight Pediatric Medical/Surgical Wards, and 22 Well Baby Units. There were no pediatric (non-neonatal)

critical care or oncology units. A total of 21,731 antibiotic DOT were attributable to pediatric units, accounting for 1.6% of all AU in the cohort. These include 5,585 (26%) DOT in Neonatal Critical Care (level II/III) Units, 4,898 (23%) in Pediatric Medical/Surgical Units, 3,910 (18%) in Well Baby Units, 3,307 (15%) in Neonatal Critical Care (level III) Units, 3,217 (15%) in Step Down Neonatal Nurseries (level II), and 814 (4%) in Pediatric Medical Wards. Ampicillin (7,229 DOT, 33%), gentamicin (6,320 DOT, 29%), ceftriaxone (1,750 DOT, 8%), and vancomycin (1,462, 7%) were the most common antibiotics administered.

AU rates were 219 DOT/1,000 patient-days in children when compared with 979 in adults. Unit-specific rates ranged from 65 (Well Baby Units) to 1,081 DOT/1,000 patient-days (Pediatric Medical/Surgical Units). Rates in level II and III nurseries ranged from 302 to 697 DOT/1,000 patient-days.

Conclusion. Pediatric patients accounted for a small proportion of AU in community hospitals. AU rates on pediatric medical/surgical units were comparable with adult units. Although rates were lower in neonatal units, these units accounted for 75% of pediatric AU. Antibiotic exposure in the neonatal period has been associated with short- and long-term outcomes, including necrotizing enterocolitis, obesity, and atopy. This population would benefit from a dedicated focus from community hospital ASPs.

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263. Effect of Microbiologic Data on Prospective Audit and Feedback Recommendations

Laura Bio, PharmD, BCPS¹; Jenna Kruger, MPH² and Hayden Schwenk, MD³; ¹Pharmacy, Lucile Packard Children's Hospital Stanford, Palo Alto, California, ²Lucile Packard Children's Hospital Stanford, Palo Alto, California, ³Pediatric Infectious Diseases, Stanford University School of Medicine, Stanford, California

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Background. Prospective audit and feedback (PAF) is an effective method of antimicrobial stewardship. Given the time-intensive nature of PAF and low rates of intervention, understanding predictors of PAF recommendation and acceptance is imperative. Prior studies have not examined the impact of microbiologic data on the rate of PAF recommendation or recommendation acceptance. We evaluated whether antimicrobials prescribed for patients with positive microbiologic culture data were more or less likely to have a PAF recommendation and whether the presence of culture data impacted recommendation acceptance.

Methods. All PAF audits on antibiotic and antifungal medications for patients admitted to Lucile Packard Children's Hospital Stanford between April 18, 2017 and April 17, 2018 were included. The PAF program included all pediatric units and injectable antimicrobials active for >48 hours. PAF documentation was completed in the electronic health record and included the presence or absence of positive microbiologic culture data. Our primary outcome was a comparison of PAF recommendation rate based on the presence or absence of positive culture data. We also evaluated whether there were differences in the recommendation acceptance rate and the type of recommendation based on the presence or absence of positive culture data.

Results. Of the 3,250 audits performed during the study period, 802 (25%) had positive cultures at the time of audit documentation. Of the 802 audits with positive cultures, 299 resulted in a recommendation compared with 824 of the 2,448 audits without positive cultures (37% vs. 34%, $P = 0.07$). PAF recommendations were more likely to be followed when positive culture data were present at the time of audit (80% vs. 73%, $P = 0.03$). The most common recommendation in the presence of positive culture data was to change the antimicrobial (27%) while the most common recommendation in the absence of positive culture data was to stop the antimicrobial (30%).

Conclusion. The presence of positive microbiologic culture data did not impact the PAF recommendation rate. However, recommendations were more likely to be followed when there was concurrent positive culture data. This highlights the importance of obtaining culture data to direct antimicrobial therapy.

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264. Simple and Feasible NICU Antimicrobial Stewardship Program in a Japanese Community Hospital

Taito Kitano, Medical Doctor¹; Kumiko Takagi, Medical Doctor²; Ikuyo Arai, Medical Doctor²; Hajime Yasuhara, Medical Doctor²; Reiko Ebisu, Medical Doctor²; Ayako Ohgihara, Medical Doctor²; Daisuke Kitagawa, Microlab technician²; Miyako Oka, Microlab technician²; Kazue Masuo, Microlab technician² and Hideki Minowa, Medical Doctor²; ¹Pediatrics, Nara Medical University, Kashihara, Japan, ²Nara Prefecture General Medical Center, Nara, Japan

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Background. Antimicrobial stewardship programs (ASP) have been implemented in many hospitals, including NICU departments. Although tertiary hospitals have successfully introduced ASPs by antimicrobial stewardship teams, lots of community hospitals without pediatric infectious disease specialists have difficulty implementing ASP. We present a successful implementation of simple and feasible NICU antimicrobial stewardship program in a Japanese community hospital.

Methods. We developed a protocol of antimicrobial treatment in the NICU department of Nara Prefecture General Medical Center, Nara, Japan and have implemented it from September 2017. The protocol consists of antimicrobial treatment criteria (criteria for starting antimicrobials for neonates with suspected early-onset infection, criteria of prolonged antimicrobial treatment for more than 48 hours and duration of treatment),