

POSTER ABSTRACT

169. Targets for Optimizing Oral Antibiotic Prescriptions for Pediatric Outpatients in Japan

Kazuhiro Uda, MD^{1,2}; Noriko Kinoshita, MD³; Naho Morisaki, MD, MPH, PhD⁴; Yusuke Okubo, MD, MPH^{4,5}; Masashi Kasai, MD⁶; Yuho Horikoshi, MD⁷ and Isao Miyairi, MD⁸; ¹Division of Infectious Diseases, Tokyo Metropolitan Children's Medical Center, Tokyo, Japan, ²Division of Infectious Diseases, National Center for Child Health and Development, Setagaya-ku, Tokyo, Japan, ³Division of Infectious Diseases, Department of Medical Specialties, National Center for Child Health and Development, Tokyo, Japan, ⁴Department of Social Medicine, National Center for Child Health and Development, Tokyo, Japan, ⁵Department of Epidemiology, UCLA Fielding School of Public Health, Los Angeles, California, ⁶Department of Infectious Disease Medicine, Hyogo Prefectural Kobe Children's Hospital, Hyogo, Japan, ⁷Infectious Diseases, Tokyo Metropolitan Children's Medical Center, Tokyo, Japan and ⁸Infectious Disease, National Center for Child Health and Development, Tokyo, Japan

Session: 49. Antimicrobial Stewardship: Interventions in Pediatric Populations
Thursday, October 4, 2018: 12:30 PM

Background. In Japan, 92% of antibiotics consumed are oral agents most of which are prescribed at outpatient clinics. Universal health insurance and the full reimbursement program for children enables to patients to be treated and obtain prescriptions without any charge in the majority of institutions. Thus, it is possible that unnecessary antibiotic prescription for viral illnesses is common due to free medical access in Japan. As part of a national project to formulate an effective method of antimicrobial stewardship for pediatric outpatients, the aim of our study was to identify key targets for optimizing oral antibiotic use in children by analyzing what factors are related to their prescription in three pilot districts.

Methods. We analyzed data on oral antimicrobial prescription patterns for children aged <16 years in three districts (Setagaya ward, Fuchu city, and Kobe city) using national database in Japan. Oral prescriptions were categorized according to their class, spectrum, clinic specialization, and type of clinical setting. The antibiotic spectrum was categorized as narrow, broad, or ultra-broad.

Results. In total 13,869,332 antibiotic prescriptions were collected for analysis. The proportions of narrow, broad, and ultra-broad spectrum antibiotics were 12.4%, 73.3%, and 14.2%, respectively. The proportions of narrow and ultra-broad spectrum antibiotics were 10.8% and 15.4% in primary care clinics and 23.4% and 5.4% in hospital, respectively. Otolaryngologists prescribed the most antibiotics to children at a rate 1.3 times higher than pediatricians (Figure 1). Dermatologists prescribed 58.7% of all tetracyclines (Figure 2). Three classes of third-generation cephalosporins, quinolones, and penems were prescribed mostly by pediatricians and otolaryngologists.

Conclusion. Ultra-broad spectrum antibiotics were prescribed more often in primary care clinics. As the use of specific oral antibiotics differ according to the specialty of each clinic, targeting the clinics specialty and the antibiotic agents used may be key to optimizing oral antibiotic use for pediatric outpatients.

Figure 1: Day of therapy in the hospitals and clinics

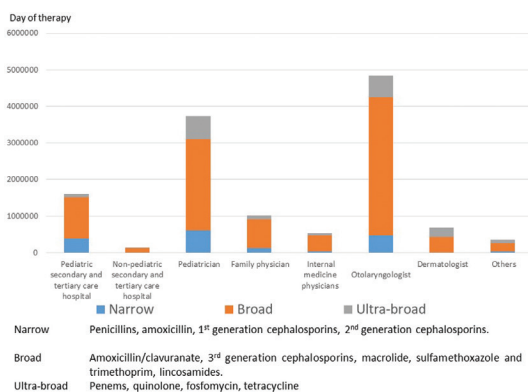
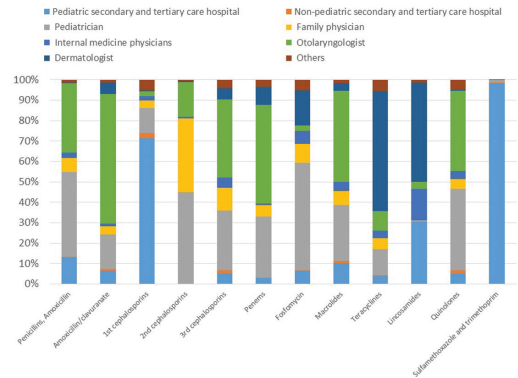


Figure 2: Ratio of clinics and hospitals in each type of antibiotics.

Open Forum Infectious Diseases® 2018;1(S1):S76-758

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DOI: 10.1093/ofid/ofy210



Disclosures. All authors: No reported disclosures.

170. Characterization of Appropriate Antibiotic Prescribing for Pediatric Respiratory Tract Infections: Setting the Stage for Stewardship

Adam L. Hersh, MD, PhD¹; Emily Thorell, MD, MSCI²; Diane Liu, Liu³; Mingyuan Zhang, MS³; Karl Madaras-Kelly, PharmD, MPH⁴; Matthew Samore, MD, FSHEA⁵; Lauri Hicks, DO⁶ and Katherine Fleming-Dutra, MD⁷; ¹University of Utah School of Medicine, Salt Lake City, Utah, ²Department of Pediatrics, Division of Pediatric Infectious Diseases, University of Utah School of Medicine, Salt Lake City, Utah, ³University of Utah, Salt Lake City, Utah, ⁴Pharmacy Service, Boise Veterans Affairs Medical Center, Boise, Idaho, ⁵University of Utah School of Medicine, Division of Epidemiology, Salt Lake City, Utah, ⁶Centers for Disease Control and Prevention, Atlanta, Georgia, ⁷CDC, Atlanta, Georgia

Session: 49. Antimicrobial Stewardship: Interventions in Pediatric Populations
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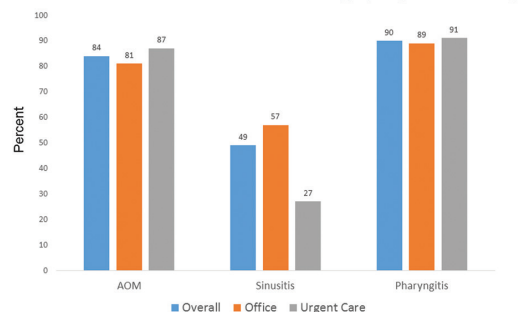
Background. Inappropriate antibiotic use includes prescribing for antibiotic inappropriate diagnoses and use of broad-spectrum instead of narrow-spectrum therapies and contributes to adverse events and antibiotic resistance. To guide the design and implementation of antibiotic stewardship interventions in a network of pediatric clinics, we sought to characterize appropriate antibiotic prescribing for children diagnosed with uncomplicated respiratory infections.

Methods. Retrospective cohort study of visits by children to one of 31 primary care or six urgent care clinics in a university healthcare system between January 1, 2016 and December 31, 2017. Two outcomes were used to characterize antibiotic prescribing: (1) percentage of antibiotic inappropriate diagnoses (bronchitis, bronchiolitis, upper respiratory infection) that were prescribed an antibiotic; (2) percentage of visits with a diagnosis for acute otitis media (AOM), sinusitis, or pharyngitis prescribed first-line recommended antibiotics (amoxicillin or penicillin). Children with a documented penicillin allergy or antibiotic prescriptions in the previous 30 days were excluded. Chi-square tests were used to compare prescribing between settings.

Results. Among 117,279 total visits examined, 16,760 (14%) were for antibiotic inappropriate diagnoses, 5,912 (5%) for AOM, 844 (1%) for sinusitis and 4,912 (4%) for pharyngitis. Only 3% (95% CI: 2.9-3.4) of antibiotic inappropriate diagnoses were prescribed antibiotics. The percent of visits for AOM, sinusitis, and pharyngitis prescribed first-line antibiotics ranged from 27% (95% CI: 21-33) for sinusitis in urgent care to 91% (95% CI: 90-92) for pharyngitis in urgent care (figure). Differences in appropriate prescribing by setting were observed for AOM ($P < 0.01$) and sinusitis ($P < 0.01$).

Conclusion. In this network of pediatric practices, we found minimal evidence of unnecessary antibiotic use for respiratory infections but substantial underuse of first-line therapy for sinusitis, especially in urgent care settings. Stewardship interventions designed to reinforce existing practices for antibiotic-inappropriate conditions and promote greater use of appropriate first-line therapies are planned for this setting.

Percent Prescribed Recommended First-Line Therapy by Diagnosis and Setting



Disclosures. All authors: No reported disclosures.