Targets for optimizing oral antibiotic prescriptions for pediatric outpatients in Japan

Kazuhiro Uda 1, 2) Noriko Kinoshita 2, 3) Naho Morisaki 4) Masashi Kasai 5) Yuho Horikoshi 1) Isao Miyairi 2)

1) Division of Infectious Diseases at Tokyo Metropolitan Children’s Medical Center, Tokyo, Japan
2) Division of Infectious Diseases, 3) Department of Social Medicine, National Center for Child Health and Development, Tokyo, Japan
4) Disease Control and Prevention Center, National Center for Global Health and Medicine, Tokyo, Japan
5) Department of Infectious Disease Medicine, Hyogo Prefectural Kobe Children’s Hospital, Hyogo, Japan

Number: 169
Session: 49.
Antimicrobial Stewardship

Contact information
Kazuhiro Uda, MD
E-mail: uda-ka@ncchd.go.jp

Background

- In Japan, 92.6% of prescribed antimicrobials are oral agents, most of which are for outpatients 1).
- An initial step of the outpatient antimicrobial stewardship program is to identify key targets for intervention, which may differ in each country.
- One characteristic of Japan is the pediatric health care system of free medical access to any clinical specialty without financial burden.
- Little is known about the specific patterns of prescribing antibiotics according to clinical specialty.
- The aim of our study was to observe differences in oral antimicrobial prescription patterns for children by clinical specialty and to identify key targets for optimizing oral antibiotic use in children.

Materials and Methods

- Design: Retrospective study
- Database: National claims database
- Inclusion criteria: children aged <16 years old in three districts (Area A: Fuchu city; Area B: Setagaya ward; Area C: Kobe city)
- Study period: January 2013 to December 2016
- Outcome of interest: 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.

Categorization

[Narrow] penicillins, amoxicillin, 1st & 2nd-gen cephalosporins
[Broad] amoxicillin/clavulanate, 3rd-gen cephalosporins, macrolides, lincosamides, SMX/TMP
[Ultra-broad] penems, fosfomycin, tetracyclines, quinolones

Results

- In total, 13,869,332 antibiotic prescriptions were collected for analysis.

<table>
<thead>
<tr>
<th></th>
<th>Narrow</th>
<th>Broad</th>
<th>Ultra-broad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinics</td>
<td>10.9%</td>
<td>73.7%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Hospitals</td>
<td>23.4%</td>
<td>71.1%</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

- Majority of antibiotics were 3rd-gen cephalosporins and macrolides.
- Third-generation cephalosporins, quinolones, penems, and carbapenems 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 differs according to the specialty of each clinic, targeting the specialty clinics and antibiotic agents used may be key to optimizing oral antibiotic use for pediatric outpatients.

Days of therapy (DOTs) values were observed to be high in clinics (pediatricians and otolaryngologists) in every area.


Sources of Funding: This study was performed as a part of a grant funded by the Ministry of Health, Labour and Welfare (MHLW Shinko-02).