



Global Antimicrobial Resistance, Prescribing, and Efficacy in Neonates and Children (GARPEC) Project: A Low Proportion of Lower Respiratory Tract Infections in Children Are Being Treated by the 2014 WHO recommendations



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BACKGROUND

Lower respiratory tract infection (LRTI) is the commonest condition for which antibiotics are prescribed to children. LRTI is one of the leading causes of mortality in children aged under 5 years according to the World Health Organisation (WHO). Amoxicillin is the first choice antibiotic for LRTI in children in the 2014 WHO recommendation. However, there is currently limited evidence on global antibiotic prescribing in children with LRTIs. This study aimed to describe patterns of antibiotic use in childhood LRTIs.

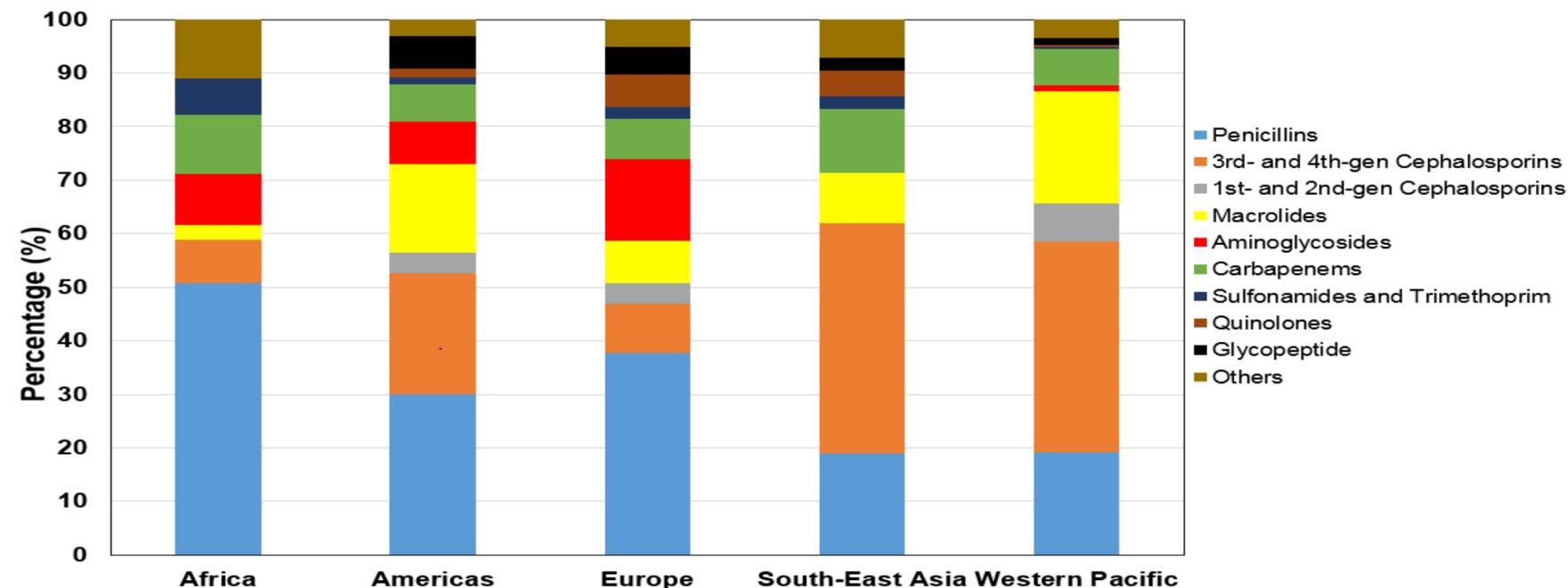
METHODS

The GARPEC project facilitates global standardized surveillance for antimicrobial use in hospitalized children and neonates. Through GARPEC, two Point Prevalence Surveys (PPSs) of antimicrobial prescribing were conducted; one between February and March 2016, the other from May to June 2016. The surveys were conducted in 59 hospitals in 20 countries covering 5 WHO regions, and included children and neonates receiving an antimicrobial on the day of PPS. Data collected included age, gender, weight, antimicrobial agents, dose, frequency, mode of administration, and reasons for treatment. A web-based surveillance system was used for data collection across country. Children aged < 18 years receiving at least one antibiotic (ATC code: J01) for LRTI treatment on the day of survey were included.

RESULTS

A total of 897 patients were surveyed, and antibiotic use for LRTIs varied across the regions. Penicillins were the most commonly prescribed antibiotic class in Africa (50.7%), Americas (30.0%), and Europe (37.7%), whereas the third-, and fourth-generation cephalosporins were the most frequently prescribed in South-East Asia (42.9%) and Western Pacific (39.3%). Macrolide use was relatively high in Western Pacific (21.0%; mainly azithromycin), 16.5% in Americas, 9.5% South-East Asia, and 2.7% in Africa (Figure 1). Overall, the most commonly prescribed antibiotic for LRTI treatment was amoxicillin/enzyme inhibitor combination (12.7%; mainly co-amoxiclav): 17.8% in Africa, 17.0% in Americas, 18.1% in Europe, 16.7% in South-East Asia, and 8.3% in the West Pacific region. The proportion of children with LRTI who received amoxicillin was 15.1% in Africa, 2.8% in Europe, 2.2% in Americas, 0.5% in West Pacific, and 0% in South-East Asia in this survey.

Figure 1 Proportion of antibiotic prescribing for lower respiratory tract infections (LRTIs) in children by WHO regions



CONCLUSION

Children with LRTIs received more broad-spectrum antibiotics in South-East Asia and Western Pacific regions, whereas penicillins were more commonly used in Africa, Americas, and Europe. Ongoing surveillance of antimicrobial prescribing patterns, and studies to understand these differences, are important to design interventions to change prescribing practices. In addition, the appropriateness and relevance of national and global prescribing guidelines needs to be reassessed.

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