



## Antibiotic prescription patterns in children and neonates in China

We would like to add some additional thoughts to the Article to which we contributed on antibiotic prescribing surveys (July, 2019),<sup>1</sup> which is the first global study to describe the paediatric patterns of WHO's Access, Watch, and Reserve classification, encompassing antibiotic prescriptions for 23 572 patients from 56 countries. 18 hospitals in nine provinces in China joined this project, and supplied the second highest number of antibiotic prescriptions for children and neonates in the study (3788), which accounted for 28.1% of the cases from 85 hospitals in 23 countries and regions in the Global Antimicrobial Resistance, Prescribing, and Efficacy Among Neonates and Children (GARPEC) network.

As described in that article, China has the lowest proportion of Access antibiotic use (7.8%) and the second highest proportion of Watch antibiotic use (74.1%). The pattern of antibiotic prescriptions in China was markedly different from that in other countries. This difference is due to various reasons, which we describe here.

First, the antibiotic gentamicin is the Access antibiotic most used globally for infections caused by Gram-negative bacteria, and is recommended by many guidelines around the world for children and neonates.<sup>2</sup> In China, however, national antimicrobial guidelines forbid prescription of gentamicin for children younger than 8 years because of possible risk of hearing loss. As an alternative, third-generation cephalosporins, which are classified as Watch antibiotics, are commonly recommended for neonates and children.<sup>3</sup>

Second, in China, a skin test is required before penicillins can be prescribed (including when given orally), whereas these Access antibiotics are commonly recommended

for children by WHO and other countries. This test is not necessary before prescribing cephalosporins. Inconvenience in clinical practice and false-positive skin tests for penicillins limit their use and promote the prescription of cephalosporins. In addition, some penicillins (eg, ampicillin) are not available in many hospitals in China.

Third, the use of macrolides was very high (20.1%) in China.<sup>4</sup> Macrolides are classified as Watch antibiotics for lower respiratory tract infections, the most common indicator to prescribe antibiotics.

Finally, according to the latest survey on knowledge, attitude, and practice of antibacterial agents among Chinese paediatricians, macrolides and third-generation cephalosporins are the two antibiotics that they are most willing to prescribe.<sup>5</sup>

It is time to improve the antibiotic stewardship for children and neonates on the basis of local antimicrobial resistance, the availability and instructions for use of antibiotics, and other factors, to reduce the level of Watch antibiotics, since they play such an important role in increasing antimicrobial resistance in China.

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