Global estimates of the relative pediatric consumption and cost of oral amoxicillin and amoxicillin plus clavulanic acid

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BACKGROUND & OBJECTIVES

• Amoxicillin and amoxicillin plus clavulanic acid (co-amoxiclav) are commonly used antibiotics for community-acquired infections in young children
• Both are “Access antibiotics” for pediatric respiratory infections in WHO Essential Medicines List for Children
• Despite higher cost, additional clinical benefit of co-amoxiclav in primary care settings is not well established
• We aimed to estimate consumption and costs of oral amoxicillin and co-amoxiclav for young children and identify variations across countries and income groups

MATERIALS & METHODS

• Consumption from 2015 IQVIA-MIDAS antibiotic wholesale data for 75 low- and middle-income (LMIC) and high-income (HIC) countries/regions, for sales volume of all child-appropriate formulations (CAF), in standard units (SU) (single tablet/capsule solid or 5 mL liquid preparation)
• Sales value estimated by applying 2015 median global buyer prices from International Medical Products Price Guide
• Global consumption estimated by consumption rates by World Bank income group to the size of the population not represented in IQVIA (based on UN Population data)
• Cost savings estimated under different plausible scenarios of the distribution of use, compared with 2015 observed consumption

RESULTS

• Global sales value (2015) CAFs of co-amoxiclav 540 million USD and amoxicillin 171 million USD.
• Median consumption rate per child-year 8.2 SUs co-amoxiclav (IQR: 3.2, 16.0) and 11.6 SUs amoxicillin (IQR 3.5-20.5)
• Co-amoxiclav accounted for 45.8% of consumption and 75.5% of sales value. Co-amoxiclav consumption as a proportion of the two antibiotics ranged from 3.3% (Norway) to 99.7% (Kuwait)
• LMICs and HIC had similar patterns of relative use and relative spending on the two antibiotics
• If co-amoxiclav accounted for a maximum of 10% of combined use, globally, approximately 219 million USD annually could be saved (38% cost reduction)

CONCLUSION

• Co-amoxiclav use is very common for pediatric treatment in some countries and accounts for a disproportionate fraction of cost, relative to consumption
• Estimates represent only wholesale purchases and are only a fraction of total cost and consumption
• Substantial cost savings could be made by clearer global guidance on the optimal use of amoxicillin versus co-amoxiclav for childhood infections

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