

Analysis of Antimicrobial Prescribing at Two Specialist Paediatric Centres in the UK and Latvia

Inese Sviestina, Jeff Aston¹, Dzintars Mozgis²

Rīga Stradiņš University, Faculty of Pharmacy, Latvia

¹ Birmingham Children's Hospital, Pharmacy Department, UK

² Rīga Stradiņš University, Public Health and Epidemiology Department, Latvia

Introduction. Antibiotics are among the most frequently prescribed drugs in children. The Point Prevalence Survey (PPS) allows identifying targets for quality improvement. Comparing antibiotic use between different countries may help identify successful initiatives that further rationalise therapy.

Aim. The aim of the study is to compare the use of antibiotics among hospitalised children in the United Kingdom and Latvia at two specialist paediatric centres as a first step to improve antibiotic usage at the hospital.

Material and methods. This study was a part of the Antibiotic Resistance and Prescribing in European Children (ARPEC) project. A PPS was conducted at two tertiary-care children hospitals – Birmingham Children's Hospital (UK) and University Children' Hospital in Rīga (Latvia) in November 2012 using validated and standardized ARPEC methodology (<http://www.arpecproject.eu/>). The data were analysed using descriptive statistics.

Results. 240 patients were included in the PPS in Birmingham and 346 patients in Rīga. The total number of patients with prescribed antibacterials in Birmingham was 117 (49%) and 128 (37%) in Rīga with males making up a greater proportion of in-patients: 76 (65%) in Birmingham and 73 (57%) in Rīga. The most common age group in Birmingham and Rīga was 1–5 years of age: 41 (35%) in Birmingham and 36 (28%) in Rīga. The most commonly used antibiotic classes were combinations of penicillins, incl. beta-lactamase inhibitors (J01CR) – 38 / 183 (21%) prescriptions in Birmingham and 3rd generation cephalosporins (J01DD) – 39 / 149 (26%) prescriptions in Rīga. Paediatric patients received 33 different antimicrobials in Birmingham, in Rīga – 20 but neonatal patients 14 different antimicrobials in Birmingham and 8 in Rīga. Top 3 antimicrobials in Birmingham were co-trimoxazole 23 / 183 (13%), piperacillin/tazobactam 20 / 183 (11%) and co-amoxiclav 18 / 183 (10%) prescriptions but in Rīga: ceftriaxone 24 / 149 (16%), cefuroxime and amoxicillin – each 18 / 149 (12%). Respiratory tract infections were the most common indications for antibiotic use in Rīga 39 / 149 (26%) but in Birmingham it was the prophylaxis of medical problems 67 / 183 (37%). Antibiotics were most predominantly used parenterally: 100 / 183 (55%) in Birmingham and 111 / 149 (74%) prescriptions to paediatric patients in Rīga.

Conclusions. The PPS identified differences in antibiotic use and the high use of parenteral antibiotics in both hospitals. Further studies are required to determine the appropriateness of the choice of antibiotics. By sharing audit data and antimicrobial stewardship initiatives further changes in practice may be observed at both institutions.