

7. Use of broad-spectrum antibiotics in hospitalized children in a low resistant country. Data from eighth point prevalence studies

Short title: Use of broad-spectrum antibiotics in Norwegian children

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Background: Antimicrobial resistance (AMR) is low in Norway compared to many other countries. To prevent an increase, the Norwegian Government has launched a National Strategy against antimicrobial resistance including a reduction of broad-spectrum antibiotics (BSA) in hospitals with 30% from 2012 to 2020. There are no recent studies describing antibiotic use in Norwegian hospitalized children.

Aim of the study: To describe the use of antibiotics with emphasis on BSA in Norwegian hospitalized children, in order to detect possibilities for optimization.

Methods: Data were extracted from eight national point prevalence registrations of systemic antibiotic prescriptions in Norwegian hospitals between 2015 and 2017. The choice of antibiotics was compared to the recommendations given in available Norwegian guidelines. In total, 1323 prescriptions were issued for 937 children.

Results: Twenty-four percent of admitted children were given antibiotics. Adherence to guidelines for empirical therapy was 48%, and 30% received BSA. Older children (>5 years) were prescribed BSA more often than younger children (38% vs 22%) ($p < 0.001$). Lower respiratory tract infections and intraabdominal infections were the most common indications for prescriptions with BSA and accounted for 26% of all BSA. In 30% of BSA prescriptions for treatment, no microbiological sample was obtained prior to medicalization.

Conclusion: Given the low prevalence of AMR in Norway, the proportion of children receiving BSA was high, and compliance with guidelines was surprisingly low. The rate of microbiological tests prior to antibiotic prescriptions should be increased to optimize prescriptions. There is room for improvement of diagnosing and treatment of infections as well as prophylactic use of antibiotics in hospitalised children in Norway in order to obtain the aim of the Government National Strategy against AMR.