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Short communication

Antibiotic usage in Pediatric ward in Ferizaj Hospital

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Introduction

Antimicrobial resistance (AMR) is prescribed as the loss of effectiveness of antimicrobial drugs and has become an emergent problem within the last few years (Costelloe et al., 2010). This resistance stems from overuse or rather incorrect use of antimicrobial drugs. Correct prescription of antibiotics not only slows the rates of resistance; it can also be potentially lifesaving for patients.

In children antibiotics are among the most commonly prescribed drugs (Naqvi et al., 1979). Several studies at the end of the 1970s focusing on antibiotic prescribing attitudes in hospitalized children, indicate that approximately 35% of admitted infants and children receive antibiotics (Kjellman et al., 1979; Naqvi et al., 1979).

Widespread misuse has been reported. Almost half of all antibiotic prescriptions have been found to be inappropriate, based on clinical and financial criteria (Principi et al., 1981). Because of the increasing costs in health care, lack of uniformity in prescribing antibiotics and the emergence of antibiotic resistance, monitoring and controlling antibiotic use is of primary health concern (Kunin et al., 1973). Although there has been an increase of available antibiotics over the last 15 years, to our knowledge very few studies has reported the antibiotic use in pediatric patients (Kolar et al., 1993). On the contrary, several professional societies have issued guidelines designed to reduce the use of antibiotics worldwide by means of various control strategies (Avorn et al., 1987). Before such policies and measures can be implemented, detailed knowledge of antibiotic prescription patterns is important. This study analyzed the use of antibiotics in a pediatric hospital over 8-week period (4 November–27 December), with special regard to antibiotic prescription attitudes and patterns (generic class, dose, duration and indication).

Materials and methods

This retro- and prospective study was carried out in the Ferizaj's Hospital, a Pediatric ward in the eastern part of the Kosovo. It is the only tertiary referral center for a population of approximately four hundred thousand. Over an 8-week period (4 November–27 December) in 2021 all hospitalized patients were analyzed for antibiotic use.

Data were analyzed by using discharge letters. Medical records were analyzed for patient characteristics (age, gender, hospital department and number of hospital days), the number of antibiotics for each patient and the generic class, dose and duration of each antibiotic prescription.

Medical files could be used to obtain information on the indication for antibiotic prescription. Antibiotic therapy was defined as prescribed for a definite infection or empiric without clinical or microbiological proof of infection or prophylaxis. Empiric therapy was defined as antibiotics administered in the presence of clinical symptoms of infection, but absence of microbiological confirmation. Prophylaxis was defined as the use of antibiotics for preventing infections, e.g., before an operation or in certain immunocompromised patients.

Results and discussion

From the total of 483 patients admitted during the study period, mean of 31% received at least one course of antibiotics. Genders of patients were 46.3% female and 53.7% male patients. The highest number of prescriptions was found in the youngest age group of the study population. 68.5% patients were 0-5 years old, 22.1 % were 6-11 years old and 9.4% were 12-17 years old.

Most commonly antibiotics were prescribed in case of diagnoses of respiratory tract infections and neonatal infections or intrauterine infections. Looking at the

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diagnosis of patients with prescribed antibiotic therapy, more than 15.4% patients diagnosed with acute tonsilitis, 15.4% acute bronchitis, 14.8%, acute pharyngitis, 10.1% acute cystitis and 5.4% with abdominal colitis.

Many classes of antibiotics were prescribed. Most common were Ceftriaxone with 43.6%, Amoxicillin with 28.9%, Azithromycin with 14.1% and Erythromycin with 4%.

Most common antibiotics prescribed in youngest age group were; Ceftriaxone with 39.2%, Amoxicillin with 31.4%, Azithromycin with 18.6% and Erythromycin with 3.9%.

Over 31% of all antibiotic prescriptions were started on an empirical basis, without confirmation of an infection. Several methods are available to study antibiotic use in pediatric hospitals (Naqvi et al., 1979, Kjellman et al., 1979). In this study attention was focused on the characteristics of the population receiving antibiotics and on the indication for antibiotic prescription.The highest number of antibiotic prescriptions was made for children in the youngest age group (between 0 and 5 years). Most antibiotics were prescribed on an empirical basis. In 2005 and 2008 new guidelines were introduced for the treatment of pediatrics patients with mild symptoms, which had no major influence on the prescription attitudes of pediatricians. More commonly old regimens have been followed. Over the study period we observed a shift to the use of more expensive and broader spectrum antibiotics in all groups. Nowadays there are large problems with rising health care costs and the emergence of antibiotic resistance (Principi et al., 1981). Some recently performed studies showed an association between the prior use of antibiotics and the development of resistance (Gold et al., 1996, Toltzis et al., 1995). Because of these emergent threats it is necessary to review the use of antibiotics in the hospital continuously. Several professional organizations stimulate or promote a more prudent use of antibiotics (Avorn et al., 1987; Kunin et al., 1973).

Conclusion

In this study it was shown that a high percentage of children receive antibiotics. Our results are comparable with data found in studies performed more than 43 years ago (Kjellman et al., 1979; Naqvi et al., 1979). Improving antibiotics antibiotic prescribing in pediatric population requires a stricter policy.

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