RATIONALIZATION OF ANTIBIOTIC USE PATTERNS IN UNDER-FREE PATIENTS WITH FEVER AND COUGH IN OUTPATIENT IN TUAN RONDAHAIM HOSPITAL, PEMATANG RAYA, SIMALUNGUN DISTRICT PERIOD JANUARY – MARCH

Dilla Sastia Mara[1], Muharti Sanjaya[2]

Universitas Efarina

Abstract

Antibiotic drugs are intended to prevent and treat infectious diseases. Recently, however, experts and doctors have found that antibiotics are not as effective as they used to be. The frequency of using antibiotics that is high but not matched by appropriate or irrational provisions can have negative impacts, one of which can be resistance. This study aims to determine the rationalization of the pattern of antibiotic use in under-five patients at Tuan Rondahaim Hospital Pematang Raya, Simalungun Regency for the period January-March 2018 through retrospective data collection by means of secondary data collection. The research sample was 275 toddler patients. The results showed that the use of the most antibiotics was amoxicillin at 47.63%, the dose of antibiotics that met the rational category was 100%, and 0% irrational category. Antibiotic indications that show 100% rational categories, 0% irrational categories, length of use of antibiotics that meet 100% rational categories, 0% irrational categories.

*Keywords:*Use of Antibiotics, Toddler Patients, Fever and Cough

INTRODUCTION

Antibiotics are a class of drugs that are most widely used in the world due to the high incidence of bacterial infections. According to WHO (2006), hospitals always spend more than a quarter of their budget on the cost of using antibiotics. In developed countries, 13-37% of all hospitalized patients receive antibiotics either singly or in combination, while in developing countries 30-80% of hospitalized patients receive antibiotics. Often the use of antibiotics can cause resistance problems and unwanted drug effects, therefore the use of antibiotics must follow the antibiotic prescribing strategy (John Hopkins Medicine et al., 2015).

Antibiotic drugs are intended to prevent and treat infectious diseases. Giving antibiotics in conditions that are not caused by bacteria is commonly found in daily practice, both in health centers (primary), hospitals, and private practice. The inaccuracy of the diagnosis of the selection of antibiotics, indications to dosage, method of administration, frequency and duration of administration is the cause of the weak effect of infection with antibiotics (Ministry of Health, 2002).

According to the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC), only about 30-40% of appropriate use of antibiotics in children. Improper use of antibiotics includes administration without infection, excessive number of doses, inappropriate timing of administration, and not using effective and efficient antibiotics (Van Dijk et al., 2011).

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The frequency of using antibiotics that is high but not matched by appropriate or irrational provisions can have a negative impact. One of them can occur resistance. Antibiotic resistance can prolong the period of infection, exacerbate clinical conditions, and risk the need for the use of more expensive advanced antibiotics that are more effective and toxic (Guliyah, 2011).

The choice of antibiotics is determined by the clinical condition of the patient, the germs that play a role and the side of the antibiotic drug itself. Factors that need to be considered in the administration of antibiotics in terms of the patient's clinical condition are emergencies or non-emergencies, patient age, renal insufficiency, impaired liver function, granulocytopenia and blood clotting disorders (Di Piro jt, Talbert, RL, Yee GC. Mantzke GR. Wells BG, Posey LM., 1997).

Formulation of the problem

The rationalization of antibiotic use in toddlers with fever and cough is not yet known as an outpatient at Tuan Rondahaim Hospital, Pematang Raya, Simalungun Regency.

METHODS

This research is a cross sectional study using a descriptive design. Retrospective data collection in January-June 2018 through secondary data collection, namely from medical records and prescriptions for toddler patients at Tuan Rondahaim Hospital Pematang Raya, Simalungun Regency.

The research was conducted in August - September 2018 at Tuan Rondahaim Hospital, Pematang Raya, Simalungun Regency.

RESULTS AND DISCUSSION

Contents Results and Discussion

In this study, researchers carried out rational identification through observing prescription data and medical records of toddler patients at Tuan Rondahaim Hospital Pematang Raya, Simalungun Regency for approximately one month. Observation of prescriptions was carried out in the medicine room where researchers separated prescriptions from toddler patients. Sampling was carried out by means of random sampling. Data on all oral drugs, both concoctions and syrups and topicals, were recorded. While data on body weight, age of the patient and diagnosis of the disease.

Rationale assessment is done by looking at the approach from medicine to disease. To assess the rationale for the use of antibiotics in under-five patients comes from the Specialist Formulary of Child Health issued by the Indonesian Ministry of Health and the Indonesian Pediatrician Association and the 2008 Indonesian Medicine Specialist Information.

The main focus of assessing the rationale for the use of antibiotics in this study is aimed at the rationale for the dose rather than the rationale for the indication and duration

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of use. This is due to the many clear references regarding dosage information for assessing the rationality of drugs compared to complete information regarding rational indications and duration of drug use.

1. **Type of antibiotic**

   The most use of antibiotics in toddler patients at Tuan Rondahaim Hospital Pematang Raya Simalungun Regency January-March 2018 was Amoxycillin syrup of 47.63%, Erithromycin syrup 18.90%, Co-trimoxazole syrup 15.27%, Cefixime syrup 10.54%, Cefadroxil syrup 7.27%, Amoxycillin drops 0.34%.

   Amoxycillin is a type of penicillin class of antibiotics used to treat the respiratory tract, urinary tract, and celine tract. Amoxycillin only functions to treat bacterial infections and cannot treat infections caused by viruses, such as the flu. This drug kills bacteria by inhibiting the formation of the bacterial cell wall.

   These results are in accordance with the treatment steps stipulated by the Indonesian Ministry of Health in the Indonesian Integrated Management Chart Book for Sick Toddlers (ITBS). In the book it is stated that for all classifications that require appropriate antibiotics, the first choice antibiotic is Amoxycillin (Ministry of Health, 2001).

2. **Rationale of antibiotic dosage**

   From this study, as a whole it can be concluded that the rationale percentage of the dose of antibiotic use in toddlers with fever and cough in outpatient care at Tuan Rondahaim Hospital Pematang Raya, Simalungun Regency for the period January-March 2018 is 100% rational and 0% irrational.

   A rational dose of an antibiotic drug is a drug dose that is still said to be in the usual dose and does not exceed the maximum dose according to what has been stipulated in the Indonesian Pharmacopoeia.

3. **Rationale for antibiotic indications**

   There are two rational assessments of antibiotic indications, namely rational and irrational. Indications for antibiotics that meet the category of rational indications (100%) are irrational (0%). Rational criteria in this study were given if the indication for the use of antibiotics was suitable for the treatment of diseases caused by bacteria. Of the 275 rational use of antibiotics, the highest indication was Amoxycillin syrup (47.60%) for the treatment of Acute Respiratory Infections (ARI), and the lowest was Amoxycillin drop I (0.34%), based on Integrated Management of Sick Toddlers (IMCI) issued by the Indonesian Ministry of Health in 2001, antibiotic therapy for toddlers is for 5 days, if it exceeds the usage limit, the drug is categorized as irrational.

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4. **The rationale for long-term use of antibiotics**

   Duration of use of antibiotics is the length of time the drug is used or the duration of treatment. The duration of use of antibiotics for finished drug syrup preparations is taken from the volume of preparations available on the market divided by the volume of drug use per day. Whereas for topical preparations where the duration of use is not written, it is assumed that the duration of use is rational because the doctor has given information on the duration of use.

   The duration of use of antibiotics is generally 3-5 days. Based on the Integrated Management of Sick Toddlers (IMCI) issued by the Indonesian Ministry of Health in 2001, antibiotic therapy for toddlers is for 5 days. If it exceeds the usage limit, antibiotics are categorized as irrational. In the results of this study, the rational use of antibiotics was (100%), and the irrational use of antibiotics (0%).

CLOSING

Conclusion

1. The pattern of prescribing the most antibiotics was prescribing Amoxycillin syrup of 47.60%.
2. The dose of antibiotics that meet the rational category is 100% and the irrational category is 0%.
3. Indication of antibiotics that meet the rational category of 100%, irrational category of 0%
4. Duration of use of antibiotics that meet the rational category of 100% and 0% of the irrational category.

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