

Pharmacotherapy Patterns of Common Cold Patients in Children at Regional Public Hospital of Klungkung Regency

Xena Laveda¹, Ayu Setyorini Mestika Mayangsari², I Nyoman Budi Hartawan²

¹Medical Student of Udayana University, Denpasar, Bali

²Division of Pulmonology, Department of Pediatrics, Faculty of Medicine, University of Udayana/Sanglah General Hospital, Denpasar, Bali

Abstract: Common cold is an infectious disease of the respiratory tract often experienced by children. Common cold is mild and self-limited, but the management of it is frequently irrational. This study aims to review the pharmacotherapy patterns of common cold in children. This study was an observational descriptive study with a cross-sectional design. Secondary type data collection through medical records of patients with a diagnosis of ARI or common cold with a total sample of 86 units. The most common symptoms are fever (80%), followed by cough (59%), runny nose (47%), headache (6%), and sore throat (5%). The dominant pharmacotherapy used was the analgesic-antipyretic group (79%), followed by the mucolytic group (48%). Other prescription drugs includes antibiotics (31%), corticosteroids (14%), decongestants (16%), and antihistamines (14%). There are uses of multivitamins (6%) and zinc (1%). The dominant antibiotic group used is penicillin (20%), followed by cephalosporins (9%) and macrolides (2%). The pharmacotherapy pattern of common cold patients in children in RSUD Klungkung Regency is considered quite good, but can still be improved.

Keywords: common cold, pharmacotherapy patterns, antibiotics, corticosteroids, analgesic-antipyretics.

I. INTRODUCTION

Common colds is an infectious disease in the upper respiratory tract that can be caused by various types of viruses, especially rhinovirus. Symptoms include nasal congestion, nasal discharge, sneezing, coughing, and sore throat [1]. Infants and children will have a common cold for about 6-8 times per year, while adults generally will have a common cold for about 2-3 times per year [2]. Common colds are the primary reason parents bring their children to see a doctor [3].

Many drugs to treat coughs and colds in children are freely available on the market, such as antihistamines, decongestants, antitussives, and expectorants. In primary health services, irrational managements of coughs and colds are oftentimes found. More than 90% of patients with complaints of coughs and colds get antibiotics. While in fact, more than 87% of patients with coughs and colds are generally caused by a viral infection that does not require antibiotics. Irrational use of antibiotics will increase the likelihood of bacterial resistance, which arise a global health problem. According to the Cochrane meta-analysis study, there were no advantages in using antibiotics in the treatment of common cold. Giving corticosteroids is also often found in practice. Corticosteroids do not have a significant impact compared to placebos. In young children, giving corticosteroids can even worsen the situation [4].

Common cold is a mild and self-limited disease. The patient will improve by itself within a week to two weeks without any treatment required. The use of drugs should be limited to relieve existing symptoms, and not attempt to cure the causative agent of the disease [5].

Based on that ground, the author will aim to determine and evaluate the pharmacotherapy patterns of common cold in children.

II. METHODOLOGY

This research was a retrospective observational descriptive study with a cross sectional design. Data collection through the medical records of patients with common cold diagnoses that were recorded and had received therapy at the Regional Public Hospital of Klungkung Regency in 2019. The samples taken were those that had met the inclusion criteria, which is being registered in pediatric ward registration, complete identity, clear recording of disease complaints and the patients management, and exclusion criteria are not included, which is unclear medical record, co-infections, or other comorbidities. A total of 86 eligible data therefore comprise the study sample and further analyzed descriptively, and presented in the form of tables.

III. RESULT AND DISCUSSION

Patients who present with complaints of high fever, indicated hospitalization, and persistent symptoms for more than 7 days, did not meet the criteria of this study. Data that cannot be read clearly and incomplete are also not excluded as data in this study.

TABLE I: CHARACTERISTICS OF RESEARCH SUBJECTS

Type of Characteristics	Frequency (N)	Percentage (%)
Based on Age Group		
Infants (1 month old – 1 years old)	12	14%
Toddlers (2 years old – 4 years old)	31	36%
Early-phase children (5 years old – 7 years old)	12	14%
Late-phase children (8 years old – 12 years old)	20	23%
Adolescents (13 years old – 18 years old)	11	13%
Based on Sex		
Male	46	53%
Female	40	47%
Total	86	100%

In this study the number of male respondents (53%) was more than female (47%). The age distribution of respondents is dominated by the age group of toddlers (2 years - 4 years) (36%), followed by the age group of late-phase children (8 years - 12 years) (23%), infants (1 month - 1 year) and early-phase children (5 years - 7 years) (14%), and adolescents (13 years - 18 years) (13%).

TABLE II: OVERVIEW OF SYMPTOMS AND CLINICAL SIGNS

Keluhan	Frekuensi (N)	Persentase (%)
Demam	69	80%
Pilek	40	47%
Batuk	51	59%
Sakit tenggorokan	4	5%
Sakit kepala	5	6%

The most commonly seen symptoms are fever (80%), followed by cough (59%), runny nose (47%), headache (6%), and sore throat (5%).

TABLE III: COMMON COLD PHARMACOTHERAPY

Jenis Farmakoterapi	Menggunakan	
	Frekuensi (N)	Persentase (%)
Antibiotik	27	31%
Penisilin	17	20%
Sulfonamida	0	0%
Makrolida	2	2%
Sefalosporin	8	9%
Fluorokuinolon	0	0%
Analgesik-antipiretik	68	79%

Ekspektoran	0	0%
Mukolitik	41	48%
Dekongestan	14	16%
Antitusif	0	0%
Kortikosteroid	12	14%
Antihistamin	12	14%
Zinc	1	1%
Multivitamin	5	6%

The dominant drug used is the analgesic-antipyretic group (79%), followed by the mucolytic group (48%). However, this study result still includes prescription drugs that did not match as indicated, such as antibiotics (31%) and corticosteroids (14%), and prescriptions of drugs that were not effective, such as decongestants (16%) and antihistamines (14%). There are usage of multivitamins (6%) and zinc (1%). The dominant antibiotic group used is the penicillin group (20%), followed by cephalosporins (9%) and macrolides (2%).

Common cold is self-limited. Management for common cold is aimed at dealing with symptoms that are present, not at the causative agent of the infection. The criteria for rational treatment are right indication, right medicine, right patient, right dosage and method of use, right information, and right evaluation. According to guidelines from WHO, prescribing appropriate drugs is to choose drugs based on aspects of its efficacy, suitability, safety, cost, and having scientific evidence (evidence-based) [6]. Therefore, appropriate common cold treatment includes analgesic-antipyretic prescribing as symptomatic treatment, and inaccurate cold treatment includes antibiotic prescribing as curative measure of the infection's agent.

Based on this study result, it is known that the pharmacotherapy patterns of common cold patients in the Regional Public Hospital of Klungkung Regency can be considered quite good with the usage of analgesic-antipyretic group (79%). However, the use of antibiotics as a therapeutic option for cold symptoms is still quite high, amounting to 31%. To find out the pattern of cold pharmacotherapy in Regional Public Hospital of Klungkung Regency, it is necessary to compare with various other studies in different hospitals. A study by Dwiprahasto (1997) in a number of clinics and general practice in Yogyakarta said that there were 93% of pediatric patients with symptoms of colds given causative antibiotic therapy [7]. Another study from Munaf (2005) in a number of health centers in South Sumatra said that about 64% of pediatric patients with symptoms of colds received antibiotics as a therapeutic option [8]. According to research by Yulianto (2014) at the Primary Health Clinic Sukasada II, Buleleng, Bali, the administration of corticosteroids to colds patients reached 27.1% [9]. Better patterns of colds pharmacotherapy were found in a study conducted by Nugraha (2016) of five puskesmas in Pekanbaru, which proved the administration of antibiotics to colds patients by 31% and corticosteroids by 14% from research subjects totaling 4602 people. In this study it can also be seen that the dominant pharmacotherapy given is symptomatic therapy by using analgesic-antipyretic (70.2%) [10]. This is similar to the study results of pharmacotherapy patterns in colds patients in children at Regional Public Hospital of Klungkung Regency.

A number of errors in giving rational and appropriate drugs have several factors that are likely to cause doctors to prescribe antibiotics, corticosteroids, and decongestants, as well as antihistamines, for patients with symptoms of colds. These factors include the limited capacity of doctors to process and understand medical information, especially regarding treatment/therapy, lack of understanding of various kinds of rational prescribing, lack of level of knowledge and awareness of the dangers of antibiotic resistance, to a lack of confidence from doctors not to giving excessive pharmacotherapy such as antibiotics and corticosteroids when patients visit. Another factor comes from the attitudes and knowledge of parents and other patients who visit and act as consumers. Parents have a high level of anxiety, especially when their child is sick, and have high expectation to get well as soon as possible without understanding the natural course of the disease and the mechanism of medication. This prompted doctors to immediately prescribe many drugs that are not rational because they increase costs without increasing the effectiveness and safety of using these drugs.

IV. CONCLUSION

The pattern of common cold pharmacotherapy at Regional Public Hospital of Klungkung Regency applies symptomatic therapy by using analgesic-antipyretic group (79%). However, medication error in the management of common cold still exists with the usage of antibiotics (31%) and corticosteroids (14%). The most widely used antibiotic is the penicillin group. Judging from the comparison of common cold pharmacotherapy patterns with other group of patients in other research, pharmacotherapy common cold patients in paediatric at Regional Public Hospital of Klungkung Regency is quite good and rational.

REFERENCES

- [1] Kopf, Robert. Common cold, respiratory disease, flu - treated with homeopathy, acupressure and schuessler salts (homeopathic cell salts). Munich: BookRix, 2013. Google books. Web. Accessed 30 Juni 2017.
- [2] Birkhauser Advances in Infectious Diseases. Common cold. Germany: Springer, 2009. Google books. Web. Accessed 30 Juni 2017.
- [3] Pujiarto, P. S. 2014. Batuk pilek (common cold) pada anak. InHealth Gazette, Agustus-November 2014, 1-8. [Online] Available from: <http://www.inhealth.co.id/uploads/INHEALTH%20GAZETTE%20Ed%20AGUST-NOV%202014%20%28ok%29.pdf> [Accessed 30 Juni 2017]
- [4] Hutton, N., Wilson, M. H., Mellits, E. D., et al. 1991. Effectiveness of an antihistamine-decongestant combination for young children with the common cold: A randomized, controlled clinical trial. The Journal of Pediatrics, 118 (1), 125-30.
- [5] National Health Service UK. 2015. Common cold - children. [Online] Available from: <http://www.nhs.uk/Conditions/cold-common/Pages/commoncoldinchildren.aspx> [Accessed 30 Juni 2017].
- [6] WHO (World Health Organization). Guide to Good Prescribing. 1994. Geneva.
- [7] Dwiprahasto, I. 1994. Antibiotic utilization in the treatment of acute respiratory infection in children under 10 years seen in private practices. New South Wales, Australia, Newcastle University.
- [8] Munaf, S. Antibiotic prescription practices in six primary health centers in South Sumatra. 2005. Med J Indones: 14(1);44-9.
- [9] Yulianto, A. dan Sari, K. A. K. Pola Pemberian Kortikosteroid pada Pasien ISPA Bagian Atas di Puskesmas Sukasada II pada Bulan Mei-Juni 2014. 2014. E-medika Udayana: 5(1);1-14.
- [10] Nugraha, D. P., Inayah. Gambaran Farmakoterapi Pasien Common Cold di Puskesmas Pekanbaru. 2016. JIK: 10(1);63-6.