Background: One type common infectious diseases nowadays is respiratory infections. This study aims to find out the impact of appropriate use of empirical antibiotic on therapeutic outcomes of patients with respiratory infections at inpatient ward UGM Academic Hospital. This study was a cross sectional that uses retrospective data through patient medical records. Population were all patients who got empirical antibiotic therapy for respiratory infections at inpatient ward on July 2018-July 2019.

Methods: Sample was collected by purposive sampling method. The appropriate use of empirical antibiotic including the right type, dosage, route, duration, and frequency was evaluated according to Antibiotic Guidelines of UGM Academic Hospital 2018, Drug Information Handbook, Frank Shann Drug Doses, Infectious Disease Society of America (IDSA)/American Thoracic Society (ATS) 2016 & 2019, Pharmacotheraphy Handbook 2015, and Pharmaceutical Care for Respiratory Tract Infections 2005. Data collected was analyzed descriptively and used Chi-square bivariate analysis.

Results: The result showed that 47.9% of patients have received antibiotics properly according to the type, route, dose, frequency and duration. The results of empirical antibiotic therapy have improved the repair of vital signs in 37.5% of patients. Chi-square bivariate analysis showed result of p = 0.478 (p> 0.05).

Conclusion: It was concluded that there was no correlation between the suitability of empirical antibiotics use with the improvement on patient therapy outcomes. Thus, the use of empirical antibiotics in accordance with the guidelines did not always have an impact on improving treatment outcomes for respiratory infection patients at inpatient ward UGM Academic Hospital.

Keywords: infection, respiratory, empirical antibiotic, suitability, outcome therapy.

INTRODUCTION

Respiratory tract infections are infections that occur in the lungs, chest, sinuses, nose, throat, which caused by bacteria or viruses [1]. Respiratory infections can attack children and adults with a high risk of mortality or morbidity, almost 4 million people die from this infection [2]. One way to ensure and find out the appropriateness of antibiotic use in hospitalized patients is evaluated the use of antibiotics on comparison with existing guidelines. Evaluation of the quality of antibiotic use is seen from the type, duration, dose, frequency, and route of administration based on the referenced guidelines [3].

METHODS

This study was a cross-sectional study with retrospective data collection through the medical records. The population was all patients with respiratory infection who received antibiotics on July 2018-July 2019. Sampling was carried out by purposive sampling method. Sample were excluded if there were incomplete medical record. Data was performed with describing patient characteristics, suitability of empirical antibiotics use, and therapy outcome. Data was matched with guidelines. The correlation between suitability of empirical antibiotic use and therapeutic outcome was analyzes using Chi-square bivariate analysis.

DISCUSSION

Empirical antibiotics for pediatrics use first-line antibiotics, which is ampicillin, or second-line antibiotics, which is cephalosporins. The administration dose of antibiotic in pediatric patient was according to the calculation of patient’s body weight. After being analyzed, the antibiotic dose was matched with the frequency and duration of antibiotic administration based on the guidelines. The therapeutic outcome of RTI patient was observed from the improvement of patient’s vital signs. Patient with bronchitis and pneumonia usually have temperature, pulse rate, and frequency of breath. These indicates the degradation of lung function and will affect the availability of oxygen in the blood [4].

The suitability antibiotic use but still didn’t give improvement patient’s outcome could be allegedly due to co-diagnosis such as heart disease disorders; stroke; or asthma. Those could inhibit the improvement of the patient’s vital signs. Another cause of the unimprovement in therapy was probably due to a history of previous respiratory diseases such as chronic obstructive pulmonary disease (COPD) and pulmonary infections, so the use of antibiotics had not been effective enough in treating the infection. The use of antibiotics, that were inappropriate type but still provided improvement in patient’s vital signs, probably because antibiotics were quite sensitive to the kind of bacteria that cause infection. Patients also received supportive therapy such as antipyretics to decrease patient’s body temperature, bronchodilators to help improve respiratory rate, and administration of oxygen to improve oxygen saturation in patients.

REFERENCES