QUALITATIVE ANALYSIS OF THE USE OF ANTIBIOTICS IN INDAPEED PATIENTS AT PKU MUHAMMADIYAH HOSPITAL, WONOSOBO JANUARY-DECEMBER 2021 PERIOD

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ABSTRACT

Disease infection is a disease that is still a health problem in Indonesia Indonesia. This is because the prescription of antibiotics is very high with the use of drugs that are too high no wise so that will Upgrade happening resistance. To describe the use of antibiotics qualitatively reviewed with method Gyssens in hospital PKU Muhammadiyah Wonosobo. Study this is study observational use data retrospective. subject The study consisted of inpatients at PKU Muhammadiyah Wonosobo Hospital who received therapy antibiotics in period January – December 2021. Use of antibiotics using qualitative methods from January to December 2021 there is 53 case patient which has observed, rated from the accuracy of the indication, the dose of antibiotics, duration gift, long gift, route, intervals gift and price antibiotics obtained results 74 % use antibiotics already correct/rational and 26 % prescription which still not yet right/irrational. Use antibiotics which rational could prevent happening antibiotic resistance. use which right/right will optimizing effectiveness antibiotics in hinder the development of good bacteria in the right indication, the right dose, the right administration, the right route that benefits in process service use therapy antibiotics which true/correct

Keywords: Antibiotics, Maid Service, Gyssens

INTRODUCTION

Disease infection is problem health which urgent, especially in country develop like Indonesia. Some examples of cases of infection that often occur include: infections of the respiratory tract, urinary tract infections, digestive tract infections, skin infections as well infection due to catheter use. Amrin's research results in 2005 stated that resistance antimicrobial still occur in Indonesia consequence use antibiotic which not enough wise as well as suboptimal infection control. Antimicrobial resistance is a health problem which worldwide which can resulted various impact on service health. resistance antimicrobial can occur because exists deployment microbe resistant (spread) and selection pressure (selection pressure) (Ridwan et al, 2019). resistance antibiotics cause increasing number morbidity, mortality and cost health (Ministry of Health RI, 2011).

Antibiotics are one of the most frequently prescribed classes of drugs, both in countries developed or developing countries. based on drug use data collected through the facility Health services show that antibiotic prescriptions account for more than a quarter of the total budget (Mahmudah, Sumiwi, & Hartini, 2016). The use of antibiotics must be used rationally to prevent antibiotic resistance. The criteria for rational use of antibiotics are 1) according to indications, 2) according to dosage (considering age, weight, TB), 3) method of drug administration and the
time interval for giving the drug is right, 4) the time for giving it is right, 5) the drug is effective, 6) it minimizes the effect side and allergy drug (WHO, 2011).

Increased incidence and spread of antimicrobial-resistant microbes in hospitals. One of them is caused by the unwise use of antibiotics and low adherence to antibiotics standard precautions. The strategy used for control is by using antibiotics in a manner wise and enhancement obedience to principle prevention and control infection. (Ministry Health RI, 2015)

In House sick, use antibiotics which no need or exaggerated push development resistance and multiple resistant to bacteria certain which will spread by cross infection. There is a relationship between the use (or misuse) antibiotics with emergence resistance bacteria reason infection nosocomial. Resistance no could omitted, but could slowed down through use antibiotics which wise (Ministry of Health RI, 2011).

Analysis of trends in antibiotic consumption in 2000-2015 conducted by World Health Organization (WHO) in 76 countries shows improvement to 2030. Between 2000 and 2015, the Defined Daily Dose (DDD) value of antibiotics increased 65% (21.1 – 34.8 billion DDD) and the level consumption of antibiotics increased by 39% (11.3-15.7 DDD per 1,000 population per day) (Klein et al, 2018). On The next 2050 is expected to occur 10 million deaths due to antimicrobial resistance with 4.7 million of whom are Asian residents (Department of Health and Human Services, 2013), based on research by antimicrobial resistant in Indonesia (AMRIN Study) shows that out of 2,494 people, 43% of Escherichia coli were resistant to various type antibiotics such as ampicillin (24%), co-trimoxazole (29%), and chloramphenicol (25%). Results of study of 781 patients hospitalized, 81% Escherichia was found coliable resistant against various antibiotic like ampicillin (73%), cotrimoxazole (56%), chloramphenicol (43%), ciprofloxacin (22%), and gentamicin (18%) (Ministry of Health RI, 2013).

RESEARCH METHOD

Study this is study observational with taking data in a manner retrospective. Study done hospital PKU Muhammadiyah Wonosobo on period month January - December 2021.

RESULTS AND DISCUSSION

On study this done evaluation use antibiotics in a manner qualitative. Use antibiotics in January to December 2021 shows that out of 7,060 prescription sheets, there are 2,948 sheets received antibiotic prescriptions. Qualitative evaluation is carried out by the method gyssens where data was obtained from 53 medical record data obtained from each disease poly in, poly heart, poly nerves, poly surgery, poly obgyn, and poly child.

Based on results study of antibiotic prescription in hospitalized patients PKU Muhammadiyah Wonosobo Hospital for the January-December 2021 period, it is known that there were 53 cases antibiotic prescription. This case was then analyzed qualitatively using the Gyssens method with group every case including to in category Gyssens VI-0. Method gyssens This is done by observing the use of antibiotics in each case / patient, whether they are sufficient requirements for accuracy of indication, dose, route of administration, duration of administration, interval of administration, and price antibiotics. The results of the evaluation of antibiotic prescribing in this study can be seen in Tables and Diagrams following:
# Table 1.1
Evaluation Results Antibiotics with the Gyssen Method

<table>
<thead>
<tr>
<th>V</th>
<th>IV A</th>
<th>III B</th>
<th>II A</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>(No Exist)</td>
<td>(There is antibiotics)</td>
<td>(Use)</td>
<td>(Antibiotics)</td>
<td>(User)</td>
</tr>
<tr>
<td>Indication Giving</td>
<td>which more effective)</td>
<td>antibiotics too</td>
<td>no appropriate</td>
<td>n antibiotics</td>
</tr>
<tr>
<td>Antibiotics)</td>
<td>short)</td>
<td>dose)</td>
<td>precise/wise)</td>
<td></td>
</tr>
</tbody>
</table>

| Case 20 (Heart) | Case 1 (Disease in) | Case 16 (Heart) | Case 16 |
| Case 39 (Disease In) | Case 11 (Surgery) | Case 19 (Heart) | Case 28 |
| Case 13 (Surgery) | Case 35 | (Child) |
| Case 18 (Heart) | Case 36 |
| Case 41 (Surgery) |
| Case 53 (Surgery) |

<table>
<thead>
<tr>
<th>Total</th>
<th>2 Case</th>
<th>6 Case</th>
<th>4 Case</th>
<th>2 Case</th>
<th>40 case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>3.7%</td>
<td>11.3%</td>
<td>7.5%</td>
<td>3.7%</td>
<td>75.4%</td>
</tr>
</tbody>
</table>

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**Figure 1.1**
Diagram Percentage Rationality Antibiotics
Gyssens method above, it can be seen that the majority of cases fall into category 0 which means the use of antibiotics in these cases already right/wise. from total 53 case which researched, there is 40 case which already appropriate gift the antibiotics, good from facet indication, effectiveness, toxicity, price, wide spectrum, duration of administration antibiotics, antibiotic dose, interval of antibiotic administration, route, and time of antibiotic administration. As for 14 case other divided Becomes a number of category, that is category V, IVA, IIB, and IIA.

Based on The table of antibiotic evaluation results can then be made into a percentage diagram rationality of antibiotics, where antibiotics are said to be rational if included in category 0, meanwhile categories I-VI include irrational or irrational categories. So, it can be concluded that out of 53 cases studied at the PKU Muhammadiyah Wonosobo Hospital, there were 14 cases (26%) who were given the antibiotics can be said to be irrational with the details of category V (no indication) of 2 cases, IVA category (There are other more effective antibiotics) in 6 cases, Category III B (Too brief) in 4 cases, and category II A (incorrectly dosed antibiotics) in 2 cases. Apart from 14 of those cases, the remaining 40 cases (74%) were cases belonging to category 0 or antibiotics which given in a manner rational.

In this study, there were 2 cases included in category V, namely cases 20 and 39. In case 20, it is known that there is use of antibiotics without indication. Use of given antibiotics is ciprofloxacin. Based on the patient's laboratory data, it is known that there is no increase in the number leukocytes or still within the range of normal values, and the urinalysis test results also did not show presence of urine bacterial culture, as well as the clinical condition of the patient did not show any signs of infection. Besides that, the case of prescribing antibiotics without an indication was in case no 39 where the patient was given ceftriaxone + metronidazole with diagnosis CHF, dyspnea, anorexia, and IHD.

The evaluation results for category IV A obtained 6 cases (cases 1, 11, 13, 18, 41, 53). In case 1 patient with suspected tuberculosis given a combination of ceftriaxone and azithromycin antibiotics. Based on Guidelines for Treatment of Drug-Susceptible Tuberculosis and Patient Care, Suspected patient tuberculosis should be given a standard tuberculosis therapy regimen, namely 2HRZE/4R, but prescription antibiotics macrolides previously also has used in treatment tuberculosis resistant to many drug (WHO, 2017).

On case 11, a patient diagnosed with diabetes mellitus with ulcer pedis was given antibiotic therapy ceftriaxone. Adult patients over 18 years are recommended to be given a single flucloxacillin antibiotic nor combination, gentamicin single or combination together metronidazole, co-amoxiclav single or combination with gentamicin, cotrimoxazole single or combination with gentamicin as well as combination ceftriaxone and metronidazole (NICE, 2015).

On case 13, patient diagnosed with FAM Extra with abscess infection and given cefotaxime. Based on Management of Lactational Mastitis and Breast Abscesses Review of Current Knowledge and Practice, the use of penicillin is recommended because of the acidic nature of penicillin concentration in milk is not much. Patients can also be given cefalexin or clindamycin. If If the patient has an allergy to penicillin, cefalexin, or clindamycin, erythromycin can be given because erythromycin has low resistance to staphylococcus strains (Kataria et al, 2012)

Case 18, patient diagnosis IHD with sign infection seen from height number leukocytes exceed the normal value, and given Ciprofloxacin therapy. Based on Antibiotics for Secondary
literature Prevention of Ischemic Heart Disease, patients should be given macrolides such as azithromycin and roxithromycin because infection is thought to be due to the pathogenesis of IHD which is usually caused by bacteria Chlamydia pneumoniae where the bacterium correlates with the risk of myocardial infarction (Wells, BJ, et al., 2004). In case 41, the patient was prophylactic for lymphadenitis surgery and given the antibiotic Viccilin. Based on Antimicrobial therapy in otolaryngology head and neck surgery, lymphadenitis surgery patients should given antibiotics empirical ceftriaxone iv 2g/day (David, 2007).

Based on the research conducted, it is known that there were 4 cases of administration of antibiotics that were included in category III B or whose administration was too short, namely cases 16, 19, 35, and 36. In case 16, the patient had COPD and received Ciprofloxacin antibiotic therapy During 4 day. Patient COPD should have been given therapy in the span of 7-10 days, so giving 4 days is still too short (Dipiro, 2015). In case 19, the patient with a diagnosis of UTI and treated with Ciprofloxacin for 4 days. Based on the literature, UTI therapy for categories mild to moderate given for 7-14 days (AHFS, 2011). In cases 35 and 36, patients with diagnosis of enteric typhoid was given ceftriaxone antibiotics for 4 days. Based on the literature, usage IV ceftriaxone for typhoid enteric fever is for 7-14 days (Rajesh, 2015). But at PKU Hospital Muhammadiyah Wonosobo use antibiotics on patient BPJS only given 3-4 day.

Based on the research conducted, there were 2 cases included in this IIA category namely case 16 and case 28. In case 16, the COPD patient was given Ciprofloxacin 2 x 200 mg. This dose still does not meet the standard because based on the literature, Ciprofloxacin dosage for COPD patients is 2 x 500 mg (AHFS, 2011). On case 28, patient child diarrhea I given therapy antibiotics cefixime 2 x 2.25 mL. Based on the literature, the dose of cefixime antibiotic therapy for children is 4 mg/kg BW every 12 hours O’clock, so that recommendation dose on case this that is 2 x 2.6 ml (AHFS, 2011).

CONCLUSION
Use antibiotics on month January until December 2021 show from 7,060 prescription sheets, there were 2,948 sheets that received antibiotic prescriptions. And the use of antibiotics using a qualitative method from January to December 2021 there were 53 cases of patients who been observed, assessed from the accuracy of the indication, the dosage of antibiotics, duration of administration, duration of administration, route, the interval of administration and the price of antibiotics showed that 74% of the results showed that the use of antibiotics was correct/rational and 26 % prescription which still not yet right/irrational.

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