

**ACCP**  
Asian Conference on Clinical Pharmacy



Faculty of Pharmacy Airlangga University



**THE**  
**8<sup>th</sup>**  
**ASIAN**  
**CONFERENCE**  
**ON**  
**CLINICAL**  
**PHARMACY**

**Hyatt Regency Surabaya Hotel**  
Surabaya, Indonesia  
July 1 - 4, 2008

**Toward Harmonisation of Education  
and Practice of Asian Clinical Pharmacy**

**Editors**

Arie Sulistyarini | Bambang Subakti Zulkarnain | Junaidi Khotib  
Suharjono | Yunita Nita



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**ISBN:**

978-979-8249-02-0

**Organized by:**

- Faculty of Pharmacy, Airlangga University
- The Indonesian Pharmacist Association
- The Indonesian Association of Hospital Pharmacy
- The Indonesian Association of Community Pharmacy



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Dharmawangsa Dalam, Surabaya 60286, Indonesia**

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## DRUG UTILIZATION STUDY IN HOSPITALIZED PATIENTS WITH PULMONARY TUBERCULOSIS IN SAIFUL ANWAR TEACHING HOSPITAL MALANG

**Aniek Setiya Budiati<sup>1</sup>, Rachma Pramestutie Hananditia<sup>2</sup>, Santoso<sup>2</sup>, Suharjo<sup>1</sup>**

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<sup>2</sup> Department of Pharmacy, Saiful Anwar Teaching Hospital, Malang

**Background:** Tuberculosis (TB) is one of the main health problems because of its morbidity and mortality, especially in developing countries such as Indonesia. According to Indonesia Household Health Survey at 1995, TB was in the third rank of mortality causes. An appropriate treatment of TB infection and disease is very lengthy, and must be monitored for adverse drug effects and effectiveness of treatment. Current guidelines for TB infection are daily isoniazid (INH) for six months in adults, and 12 months in children and immunosuppressed individuals.

**Objective:** The study was designed to analyze the drug utilization in patients with pulmonary tuberculosis who were caring in Saiful Anwar Teaching Hospital, Malang.

**Method:** The prospective observational method was conducted in this study with descriptive analysis. The 45 of hospitalized TB patients was collected at pulmonary ward of Saiful Anwar Teaching Hospital, Malang, during 3 months period of April 1st until June 31st 2007.

**Result:** The ratio distribution of hospitalized TB patients in Saiful Anwar Teaching Hospital is 40% male and 60% female. All of patients suffered from clinical symptoms related to the TB such as slight cough with mucoid sputum, weakness, night sweats, loss of appetite and weight. Our data demonstrated that 88 % patients with pulmonary TB received anti TB drugs. Beside of anti-TB drugs, patients also received broad spectrum antibiotic (fluoroquinolon and cephalosporin) for secondary infection, antitussive for cough, analgesic for chest pain, antipyretic for fever, H<sub>2</sub> blocker for peptic ulcer and vitamin B for the avoiding adverse drug reaction. The using of TB drugs based on the classification of it diseases status. The 31.8% patients with chronic state received combination of rifampicin, isoniazid, pyrazinamide and ethambutol (RHZE) (31.8 % patient's). The several cases (11.6 % patients) were given combination of rifampicin and isoniazid (RH). Furthermore, the new TB cases were treated by rifampicin, isoniazid, pyrazinamide and ethambutol (RHZE) (50.0 % patients); rifampicin, isoniazid, pyrazinamide and streptomycin (RHZS) (2.7% patient's); rifampicin, isoniazid and ethambutol (RHE) (2,7% patients) and rifampicin, isoniazid, pyrazinamide, ethambutol (RHZE adjuvant) (2,7 % patients). After treatment with combination of TB drugs, the majority patient getting recovered condition (44.73%) and improving condition (47.73 %). On the other hand, 2.6 % of patients were forced discharge from hospital without improving condition and 5.3% were died. During the course of therapy, the adverse drug reactions also appeared in several cases.

**Conclusion:** Treatment TB that it consists of multiple drugs and long-term administration has effective to recover the pulmonary tuberculosis with several adverse drug reactions.

**Keywords:** drug utilization study, pulmonary tuberculosis, adverse drug reaction.

**DRUG UTILIZATION STUDY IN HOSPITALIZED PATIENTS WITH  
PULMONARY TUBERCULOSIS IN SAIFUL ANWAR TEACHING HOSPITAL,  
MALANG**

*Aniek Setiya Budiati\**, *Rachma Pramestitie Hananditia\**, *Santoso\*\**, *Suharjono\**  
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**BACKGROUND**

Tuberculosis (TB) is one of the main health problems because of its morbidity and mortality, especially in developing countries such as Indonesia Household Health Survey at 1995, TB was in the third rank of mortality causes. An appropriate treatment of TB infection and disease is very lengthy, and must be monitored for adverse drug effects and effectiveness of treatment. Current guidelines for TB infection are daily isoniazid (INH) for six months adults, and 12 months in children and immunosuppressed individuals.

**OBJECTIVE**

The study was designed to analyze the drug utilization in patients with pulmonary tuberculosis who were caring in Saiful Anwar Teaching Hospital, Malang

**METHOD**

The prospective observational method was conducted in this study with descriptive analysis. The 45 of hospitalized TB patients was collected at pulmonary ward of Saiful Anwar Teaching Hospital, Malang, during 3 months period of April 1st until June 31st 2007

**RESULTS**

The ratio distribution of hospitalized TB patients in Saiful Anwar Teaching Hospital, Malang is 40% male and 60% female. All of patients suffered from clinical symptoms related to the TB such as slight cough with mucoid sputum, weakness, night sweats, loss of appetite and weight. Our data demonstrated that 88% patients with pulmonary TB received anti TB drugs. Beside of anti-TB drugs, patients also received broadspectrum antibiotic (fluoroquinolon and cephalosporin) for secondary infection, antitussive for cough, analgesic for chest pain, antipyretic for fever, H2 blocker for peptic ulcer and vitamin B for the avoiding adverse drug reaction. The using of TB drugs based on the classification of it diseases status. The 31.8% patients with chronic state received combination of rifampicin, isoniazid, pyrazinamide and ethambutol (RHZE) (31.8% patients). The several cases (11.6% patients) were given combination of rifampicin and isoniazid (RH). Furthermore, the new TB cases were treated by rifampicin, isoniazid, pyrazinamid and ethambutol (RHZE) (50.0% patients); rifampicin, isoniazid, pyrazinamide and ethambutol (RHZE adjuvant) (2.7% patients). After treatment with combination of TB drugs, the majority patient getting recored condition (44.73%) and improving condition and 5.3% were died. During the course of therapy, the advers drug reactions also appeared in several cases.

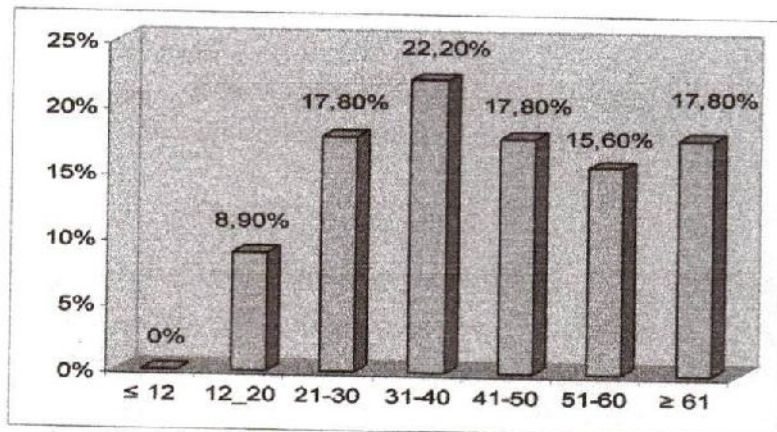


Fig 1. The profile of hospitalized patients with pulmonary tuberculosis in Syaiful Anwar Teaching Hospital, Malang

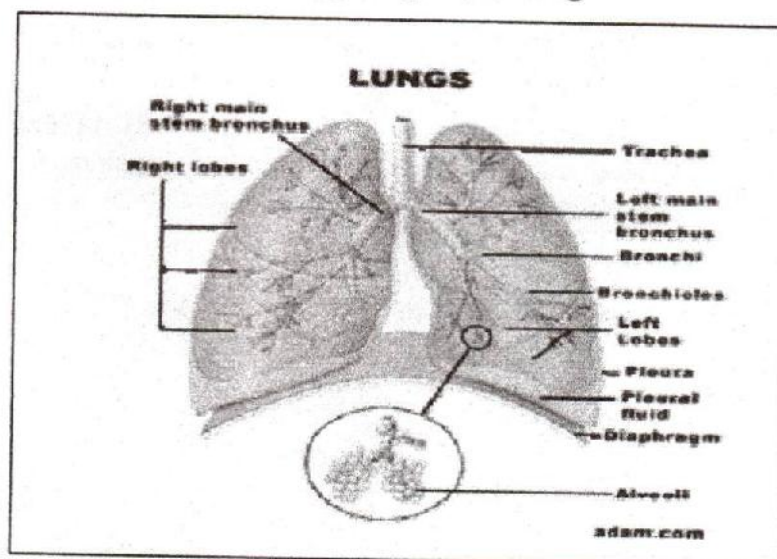


Fig 2. Schematic healthy lungs

Tabel 1. The profile of anti TB usage of hospitalized patients with pulmonary tuberculosis in Saiful Anwar Teaching Hospital, Malang

Period of case TB	Drug composition	Frequence	%
Old case	RHZE	14	31
	RH	5	11
New case	HRZE	22	50
	HRZS	1	2
	HRE	1	2
	HRZE (adjuvant)	1	2



## CONCLUSIONS

Treatment TB that it consists of multiple drugs and long-term administration has effective to recover the pulmonary tuberculosis with several adverse drug reactions.

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## ACKNOWLEDGEMENTS

Many thanks to the organizing committee for the opportunity to present this poster. Furthermore, we thank to Dean of Faculty of Pharmacy Airlangga University for the supportive fund.

*Presented in The 8<sup>th</sup> ACCP, July 1<sup>st</sup> - 4<sup>th</sup> 2008, Faculty of Pharmacy Airlangga University, Surabaya, Indonesia*

**THE STUDY OF ANTIMICROBIAL UTILIZATION IN HOSPITALIZED PATIENTS WITH AIDS  
(IN DEPARTMENT OF INFECTION DISEASE INTERMEDIATES CURE DR. SUTOMO GENERAL HOSPITAL SURABAYA, INDONESIA)**

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The purpose of this study was to analyze antimicrobial utilization in AIDS patients who were hospitalized during 1<sup>st</sup> July until 31<sup>st</sup> December 2006. This research was descriptive analysis by using retrospective data from patient's medical record. This study has been done to find out antimicrobials utilization with clinical and laboratories data, to find out opportunistic infection in AIDS patients, and to identify Drug Related Problems which related to dosage and drug interaction in patients with AIDS. The results showed that most commonly attack AIDS patient were septicemia (42.86%), chronic diarrhea (32.86%), oral candidiasis (30%), lungs tuberculosis (32.86%), and pneumonia (14.29%). The results showed that antimicrobial which most used were Cotrimoxazole (77.14%). Antituberculosis regimen used was rifampycin-isoniazid-pyrazinamide-ethambutol (22.86%), streptomycin-ethambutol (8.57%), rifampycin-isoniazid (1.43%). Nystatin (70%), fluconazole (42.86%) and ketoconazole (2.86%) was antifungal regimen used in AIDS patients with oral candidiasis. There was 21.43% AIDS patients not received antimicrobial therapy in proper duration. The drug interaction that might be happened between antimicrobial and other drug which used on patient were found in this research. According to literature, 18 type of drug interaction could happen in hospitalized AIDS patients were found in this study. This Drug Related Problems such as drug interaction was not observed in clinical setting. Therefore, a prospective study might be better method to observe drug utilization and drug related problems in AIDS patient

**Keywords** : AIDS, DUS, retrospective-descriptive analysis, Opportunistic infection, Antimicrobial, Antituberculosis, Antifungal.

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