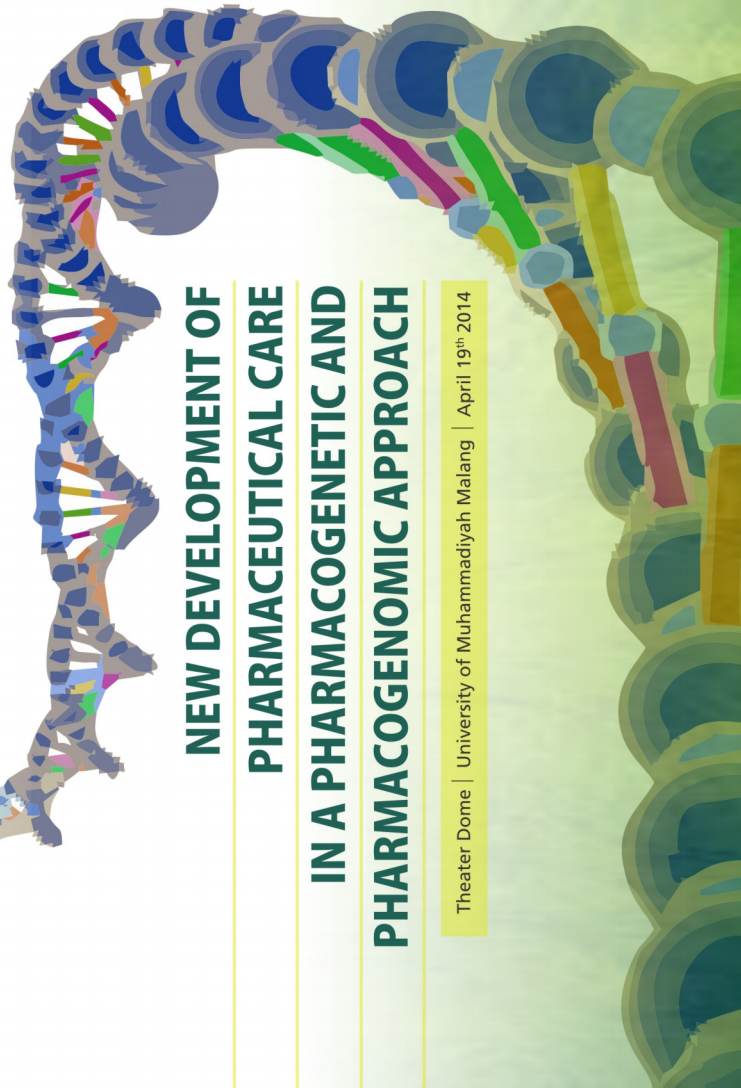


PROCEEDING

The International Conference
Pharmaceutical Care



NEW DEVELOPMENT OF PHARMACEUTICAL CARE IN A PHARMACOGENETIC AND PHARMACOGENOMIC APPROACH

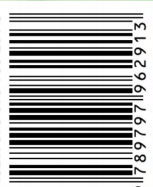
Theater Dome | University of Muhammadiyah Malang | April 19th 2014

PROCEEDING THE INTERNATIONAL CONFERENCE PHARMACEUTICAL CARE



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EFFECTIVENESS COMPARATION OF INTRAVENOUS CEFTRIAZONE MONOTHERAPY VS INTRAVENOUS CEFTRIAZONE PLUS CIPROFLOXACIN COMBINATION IN HOSPITALIZED PNEUMONIA

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ABSTRACT

Background : One of the most important treatment in pneumonia is antibiotic. Wide variations in antimicrobial prescribing practices exist in hospitalized pneumonia. Choice of first-line empiric treatment of pneumonia is still being debated.

Objective : The objective of this study was to compare the effectiveness between ceftriaxone i.v monotherapy (CTX) vs combination therapy of ceftriaxone i.v plus ciprofloxacin i.v (CTXCP) as empiric treatment in patients with hospitalized pneumonia.

Methods : The research was retrospective study. Data was recruited by purposive sampling from patient's medical record with pneumonia in Hospital DR. Kariadi during Januari-Desember 2012. The inclusion criterias were adult patients (age>18 year) with hospitalized pneumonia and who got CTX or CTXCP treatment and the medical record was complete. The exclusion criterias were pneumonia diagnosed as aspiration pneumonia, patient with immunocompromized complication (HIV/AIDS or malignancy), and patient with another infection. There were 171 patients recruited, 106 patients received CTX treatment and 65 patients received CTXCP.

Outcome measured : Effectiveness parameters of this study were LOS (length of stay), LOSAR (length of stay antibiotic related), success rate, and CFA (first line clinical failure avoided).

Results : The result of the study showed that the parameters LOS and LOSAR were shorter in CTX group than CTXCP (11,32 vs 13,15 days, $p=0,14$ and 9,26 vs 12,09 days, $p=0,000$). The success rate and CFA in CTX group better than CTXCP (81,13% vs 66,15%, $p=0,027$ and 71,79% vs 44,62%, $p=0,000$).

Conclusion : In conclusion, monotherapy ceftriaxone i.v was more effective than combination therapy of ceftriaxone i.v plus ciprofloxacin i.v as empiric treatment of hospitalized pneumonia in Hospital DR. Kariadi ($p<.0.05$).

Keywords : Hospitalized pneumonia, effectiveness, ceftriaxone i.v, ciprofloxacin i.v

INTRODUCTION

Pneumonia is an infectious disease inflammation in the parenchyma lung tissue. Pneumonia can be serious disease that is associated with high morbidity and mortality (Mandell, *et. al.*, 2007). The disease is prevalent in the community, but usually unreported and treated on an outpatient basis, so that the rate of incidence and morbidity is difficult to know (Koda-Kimble *et al.*, 2008). Indonesia is the 6th largest country with incidence of pneumonia in the world (Sutriyanto, 2011).

Antibiotic used in the empiric treatment of pneumonia is varies because the identification of pathogens causing pneumonia is rarely done in clinical practice. Therefore empiric pneumonia therapy usually done based on the predicted pathogen that often causes pneumonia in community, clinical presentation of patients, and the local epidemiology of pathogens causing pneumonia (Ambroggio *et. al.*, 2012). *Streptococcus pneumoniae* is the single most common bacterium responsible and number one cause of mortality in pneumonia (Mandell, *et. al.*, 2007).

The choice of first-line empiric pneumonia treatment is still being debated. Antibiotic therapy is more challenging in hospitalized pneumonia. The recommendation influenced by emergence of antibiotic resistance among *Streptococcus pneumoniae* and mono versus combination antibiotic therapy. Recent evidence suggests the superiority of combination therapy compared with monotherapy for subset populations, particularly patients with severe CAP, bacteremic pneumococcal CAP, or intubated CAP (Mandell, *et. al.*, 2007).

Current guidelines from CDC (Centers for Disease Control and Prevention, IDSA/ATS (Infectious Diseases Society of America/American Thoracic Society), CTS (Canadian Thoracic Societies), and Infectious Diseases recommended the use of respiratory fluoroquinolone (e.g. gatifloxacin, gemifloxacin, levofloxacin, and moxifloxacin) or 3rd generation cephalosporin (e.g ceftriaxone and cefotaxime) in combination with macrolides as first-line therapy (Bhavnani and Ambrose, 2008; Mandell *et al.*, 2007; Lim *et al.*, 2009).

Effectiveness combination therapy between beta-lactam and fluoroquinolone were rarely evaluated in clinical research of pneumonia therapy (Kolditz *et al.*, 2006). Many studies had focused on the combination of an extended-spectrum cephalosporin plus a macrolide (Garcia-Vazquez, *et. al.*, 2005). Fluoroquinolone usually used alone in moderate pneumonia, especially respiratory quinolone (e.g gatifloxacin, gemifloxacin, levofloxacin, and moxifloxacin). While, the combination of a beta-lactam (e.g cephalosporin and penicilline) with old fluoroquinolone (e.g. ciprofloxacin) was recommended for pneumonia caused by *Pseudomonas* (Mandell *et al.*, 2007). The effectiveness of adding ciprofloxacin as empiric treatment in hospitalized pneumonia remains unclear. This study aimed to compare the effectiveness of ceftriaxone iv monotherapy (CTX) and ceftriaxone iv plus ciprofloxacin iv (CTXCP) in patients with hospitalized pneumonia.

METHODS

This research is a comparative study that compared the effectiveness between two treatment groups, CTX group and CTXCP, in hospitalized pneumonia patients. The study was conducted retrospectively. Data derived from

DATA COLLECTION

In this retrospective study, all demographic, clinical and diagnostic data of the patients were derived from medical record of pneumonia patients admitted to hospital in the period January - December 2012. Data were grouped into two groups, CTX and CTXCP. The database includes standard hospital admission and discharge information as well as medications, laboratory, diagnostic, therapeutic services at the individual patient level, and co-morbidity. The two groups were matched by age, gender, type of payments, and co-morbidity disease.