

Nama Jurnal : **Jurnal Farmasi Galenika (JFG)**

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Judul Artikel : **EFEK KOMBINASI SEFTRIAKSON DAN KLORAMFENIKOL PADA *Staphylococcus aureus* DARI ISOLAT GANGREN DIABETIK**

Tanggal	Activity	Reviewer Comments
29-01-2022	Submission of article	
03-02-2022	Editor responses	Article has been received by editor
03-03-2022	Editor responses	Revision of article is required
11-05-2022	Resubmit the revised article	
13-03-2022	Editor responses	Revision of article is required
14-03-2022	Resubmit the revised article	
14-03-2022	Editor responses	Article is accepted
15-03-2022	Editor responses	On line published

Manuscript submission

The combination effect of Ceftriaxone and Chloramphenicol on *Staphylococcus aureus* isolate of Diabetic Gangrene

ABSTRACT

Background: Diabetic gangrene is a complication of Diabetes mellitus caused by *Staphylococcus aureus*. The combination of Ceftriaxone and Chloramphenicol is often used to eradicate gangrene infection, **however** they produce antagonistic interaction in theory. **Objectives:** to evaluate the potency of Ceftriaxone, Chloramphenicol and its combination on *Staphylococcus aureus* isolate of Diabetic gangrene. **Material and Methods:** The research was done by using disc diffusion methods with Muller Hinton media. Ceftriaxone, Chloramphenicol and its combination dose of 7.5 µg/ml, 15 µg/ml and 30 µg/ml, respectively were tested on *Staphylococcus aureus* culture taken from the diabetic gangrene patients. Antibacterial effect was observed by measuring inhibition zone on bacteria culture. The results of study were tested statistically with One Way ANOVA ($p < 0.05$) followed by Least Significant Difference (LSD) test. **Results:** The combination of Ceftriaxone and Chloramphenicol showed an antibacterial effect lower than single antibiotic. Ceftriaxone requires the cell to be growing and dividing in order to get bactericidal effect. Chloramphenicol causes a slow growth of *Staphylococcus aureus* and then impairs bactericidal effect of Ceftriaxone. **Conclusions:** Ceftriaxone and Chloramphenicol combination has lower antibacterial effect than the single antibiotic groups in *Staphylococcus aureus* isolate of Diabetic gangrene.

Keywords: Ceftriaxone, Chloramphenicol, *Staphylococcus aureus* isolate of Diabetic gangrene.

ABSTRAK

Latar Belakang: Gangrene diabetes merupakan salah satu komplikasi Diabetes mellitus yang disebabkan oleh *Staphylococcus aureus*. Kombinasi ceftriaxone dan kloramfenikol sering digunakan untuk eradikasi infeksi gangrene, **namun** mereka menghasilkan interaksi antagonis dalam teori. **Tujuan:** untuk mengevaluasi potensi ceftriaxone, kloramfenikol dan kombinasinya pada isolat *Staphylococcus aureus* dari gangrene diabetes. **Bahan dan Metode:** Penelitian dilakukan dengan metode difusi cakram dengan media Muller Hinton. Ceftriaxone, kloramfenikol dan kombinasinya dengan dosis 7,5 µg/ml, 15 µg/ml dan 30 µg/ml, masing-masing diuji pada kultur *Staphylococcus aureus* dari gangrene diabetes. Efek antibakterial diamati dengan mengukur zona hambat pada kultur bakteri. Hasil penelitian diuji secara statistik dengan One Way ANOVA ($p < 0,05$) dilanjutkan dengan uji beda nyata terkecil (DNT) Hasil: Kombinasi ceftriaxone dan kloramfenikol menunjukkan efek antibakterial lebih rendah dibandingkan antibiotik tunggal. Ceftriaxone memerlukan sel untuk tumbuh dan membelah agar memiliki efek bakterisidal. Kloramfenikol menyebabkan pertumbuhan lambat *Staphylococcus aureus* dan mengurangi efek bakterisidal dari ceftriaxone bila dikombinasikan. **Simpulan:** Kombinasi ceftriaxone dan kloramfenikol memiliki efek antibakterial yang lebih rendah dibandingkan dengan kelompok antibiotik tunggal pada isolat *Staphylococcus aureus* diabetes Gangrene.

Kata kunci: ceftriaxone, kloramfenikol, *staphylococcus aureus*, gangrene diabetes.

INTRODUCTION

Diabetic foot infection is a major cause of hospitalized patient in developing country (Gadapalli, 2006). In 2009, research at Makassar, Hospital Indonesia indicated about 20,61% hospitalized patients were caused Diabetic foot infection (Hanan, 2009). Severe diabetic foot infections and slow healed can lead to gangrene diabetic. Variety of bacteria causing infection of diabetic gangrene is a gram positive bacteria, gram negative and anaerobic bacteria (Brand, 2006). Research in the New England Deaconess Hospital showed gangrene diabetic infection always result more than 2 groups of bacteria (Ruwahana, 1982). *Staphylococcus aureus*, *Streptococcus sp*, *Pseudomonas sp*, are the major cause of gangrene infection (Laciter, 1988 in Nana Fitria 2008).

MATERIAL AND METHODS

MATERIALS

S. aureus isolate gangrene diabetic, Muller Hinton media, Ceftriaxone (CTX), Chloramphenicol (CML), Paper disk, McFarland turbidity standard.

METHODS

Bacteria media preparation

Muller Hinton media 3.8% was made by adding sterile distilled water and then boiled until complete dissolution. Muller Hinton media was poured into empty petri dish and left until hardened. Muller Hinton media has hardened put in an incubator with a temperature of 37°C for a 24 hour to see if there is bacterial contaminants in the media that has been made. If a bacterial contaminant does not found then the media is ready to use.

Editor responses : revision required

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mail.yahoo.com/d/search/name=Ph.D%2520Muhammad%2520Sulaiman%2520Zubair&emailAddresses=bestjournal.untad%2540gmail... Update

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[JFG] Editor Decision yahoo!INDEX

Muhammad Sulaiman Zubair, Ph.D <bestjournal.untad@gmail.com> To: Yudi Purnomo Thu, Mar 3, 2022 at 1:52 PM

Yudi Purnomo:

We have reached a decision regarding your submission to Jurnal Farnasi Galenika (Galenika Journal of Pharmacy) (e-Journal). "The combination effect of Ceftriaxone and Chloramphenicol on *Staphylococcus aureus* isolate of Diabetic Gangrene".

Our decision is: Revisions Required

Muhammad Sulaiman Zubair, Ph.D
Tadulako University
sulaiman_zubair80@yahoo.co.id

Reviewer A:
Recommendation: Revisions Required

Reviewer Comment

Dear Authors

We found that the references are out of date. Please update the references with minimal 80% updated journals

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Page 1 of 10 3680 Words English (US) 74%

Editor responses : Revision required

Ph.D Muhammad Sulaiman Zubair, Ph.D <bestjournal.untad@gmail.com>
To: Yudi Purnomo

Yudi Purnomo:

We have reached a decision regarding your submission to Jurnal Farmasi Galenika (Galenika Journal of Pharmacy) (e-Journal), "The combination effect of Ceftriaxone and Chloramphenicol on Staphylococcus aureus isolate of Diabetic Gangrene".

Our decision is: Revisions Required

Muhammad Sulaiman Zubair, Ph.D
Tadulako University
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Pharmacy) _____ Jurnal Farmasi Galenika (Galenika Journal of Pharmacy)

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Resubmit revised manuscript

The screenshot shows a Microsoft Word document titled "B-A-15819-Article Text-51994-2-15-20220313_revised". The document is in Indonesian and contains the following sections:

- Title:** EFEK KOMBINASI SEFTRIAKSON DAN KLORAMFENIKOL PADA *Staphylococcus aureus* DARI ISOLAT GANGREN DIABETIK
- Authors:** Yudi Purnomo¹, Fasha Chandra¹, Rahma Triliana¹
- Abstract:** Diabetic gangrene is a complication of Diabetes mellitus caused by *Staphylococcus aureus*. The combination of Ceftriaxone and Chloramphenicol is often used to cure gangrene infection, even though they produce antagonistic interaction based on theory. Objective: To evaluate the synergy of Ceftriaxone, Chloramphenicol and its combination on *Staphylococcus aureus* isolate of Diabetic gangrene. **Material and Methods:** The research was done by using disc diffusion method with Muller Hinton media. Ceftriaxone, Chloramphenicol and its combination dose of 7.5 µg/ml, 15 µg/ml and 30 µg/ml, respectively were tested on *Staphylococcus aureus* culture taken from the diabetic gangrene patient. Antimicrobial effect was observed by measuring inhibition zone on bacteria culture. The results of study were tested statistically with One Way ANOVA (p<0.05) followed by Least Significant Difference (LSD) test. **Results:** The combination of Ceftriaxone and Chloramphenicol showed an antibiogram effect lower than Ceftriaxone. Bactericidal antibiotic like Ceftriaxone requires that the cell be growing and dividing in order to have a bactericidal action. Meanwhile, Chloramphenicol causes a slow growth of *Staphylococcus aureus* and impairs bactericidal effect of Ceftriaxone if they are combined. **Conclusion:** Ceftriaxone and Chloramphenicol combination has lower antibiogram effect than the single antibiotic groups on *Staphylococcus aureus* isolate of Diabetic gangrene and the type of interaction is antagonistic.
- Keywords:** Ceftriaxone, Chloramphenicol, *Staphylococcus aureus* isolate of Diabetic gangrene.

The document also includes a table of contents and a list of references.

Editor responses : Accept submission

The screenshot shows a Yahoo! Mail inbox with the following email:

- From:** Muhammad Sulaiman Zubair, Ph.D <bestjournal.untad@gmail.com>
- To:** Yudi Purnomo
- Date:** Mon, Mar 14, 2022 at 9:39 AM
- Subject:** [JFG] Editor Decision

The email content is as follows:

Yudi Purnomo:

We have reached a decision regarding your submission to Jurnal Farnasi Galenika (Galenika Journal of Pharmacy) (e-Journal), "The combination effect of Ceftriaxone and Chloramphenicol on *Staphylococcus aureus* isolate of Diabetic Gangrene".

Our decision is to: Accept Submission

Muhammad Sulaiman Zubair, Ph.D
Tadulako University
sulaiman_zubair80@yahoo.co.id

Reviewer A:
Recommendation: Accept Submission

Reviewer Comment:

Editor responses

The screenshot shows a Yahoo! Mail interface. The main email is from Muhammad Sulaiman Zubair, Ph.D. (bestjournal.untad@gmail.com) to Yudi Purnomo, Pasha Chandra, and Rahma Triliana, dated Tuesday, March 15, 2022, at 11:05 AM. The subject is "[JFG] Editor Decision". The body of the email states: "The editing of your submission, 'The Combination Effect of Ceftriaxone and Chloramphenicol on Staphylococcus Aureus Isolate of Diabetic Gangrene: Efek Kombinasi Seftriakson dan Kloramfenikol pada Staphylococcus Aureus dari Isolat Gangren Diabetik,' is complete. We are now sending it to production. Submission URL: <https://bestjournal.untad.ac.id/index.php/Galenika/authorDashboard/submission/15819> Muhammad Sulaiman Zubair, Ph.D. Tadulako University sulaiman_zubair80@yahoo.co.id". The email is from Jurnal Farmasi Galenika (Galenika Journal of Pharmacy). The interface also shows a sidebar with folders like 'Compose', 'Inbox', 'Unread', 'Starred', 'Drafts', 'Sent', 'More', 'Views', 'Folders', 'New Folder', 'Notes', 'Sent Messages', and 'Unwanted'. A right-hand panel shows the sender's profile and a 'csport' advertisement.

On line published

The screenshot shows a PDF document titled "15819-Article Text-52040-2-10-20220316.pdf" in an Acrobat Reader application. The document is from Jurnal Farmasi Galenika (Galenika Journal of Pharmacy), volume 2022, issue 1(1), pages 11-48. The title of the article is "The Combination Effect of Ceftriaxone and Chloramphenicol on Staphylococcus aureus Isolate of Diabetic Gangrene". The authors are Yudi Purnomo¹, Pasha Chandra², and Rahma Triliana². The abstract states: "Background: Diabetic gangrene is a complication of Diabetes mellitus caused by Staphylococcus aureus. The combination of Ceftriaxone and Chloramphenicol is often used to cure gangrene infection, even though they produce antagonistic interaction based on theory. Objective: To evaluate the potency of Ceftriaxone, Chloramphenicol and its combination on Staphylococcus aureus isolate of Diabetic gangrene. Material and Methods: The research was done by using disc diffusion methods with Muller Hinton media. Ceftriaxone, Chloramphenicol and its combination dose of 7.5 µg/ml, 15 µg/ml and 30 µg/ml, respectively were tested on Staphylococcus aureus culture taken from the diabetic gangrene patients. Antibacterial effect was observed by measuring inhibition zone on bacteria culture. Type of interaction was analyzed by Ames-E-test Double Antibiotic Synergism Test (AZDAST) method. The results of study were tested statistically with One Way ANOVA (p=0.05) followed by Least Significant Difference (LSD) test. Result: The combination of Ceftriaxone and Chloramphenicol showed an antibacterial effect lower than Ceftriaxone β-lactam antibiotic like Ceftriaxone require the cell be growing and dividing in order to have a bactericidal action. Meanwhile, Chloramphenicol causes a slow growth of Staphylococcus aureus and impairs bactericidal effect of Ceftriaxone if they are combined. Conclusion: Ceftriaxone and Chloramphenicol combination has lower antibacterial effect than the single antibiotic groups on Staphylococcus aureus isolate of Gangrene diabetic and the type of interaction is antagonistic." The document also includes keywords: Ceftriaxone, Chloramphenicol, Staphylococcus aureus isolate, Gangrene diabetic.