

INTISARI

Efikasi Pakan Terapi Kombinasi Linkomisin-Spektinomisin terhadap Performa, Gambaran Patologi Usus dan Fungsi Hati Ayam Broiler yang Diinfeksi *Escherichia coli*

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Antibiotik merupakan senyawa yang dapat dicampur ke dalam pakan unggas yang disebut pakan terapi (*medicated feed*). Kolibasilosis merupakan penyakit yang menyebabkan kerugian ekonomi yang besar. Salah satu cara untuk meningkatkan kemampuan bakterisidal antibiotik adalah mengkombinasikan antibiotik seperti linkomisin dan spektinomisin. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian pakan terapi linkomisin-spektinomisin (PTLS) pada ayam broiler yang diinfeksi *E. coli* terhadap pertambahan berat badan (PBB), *feed conversion ratio* (FCR), perubahan klinis, serta gambaran patologi hati dan usus. Tujuan lain penelitian ini adalah mengetahui pengaruh pemberian PTLS terhadap kadar albumin, enzim alanin transaminase (ALT) dan enzim aspartat transaminase (AST), serta pengujian sensitivitas kombinasi linkomisin-spektinomisin dengan menggunakan *E. coli*. Delapan puluh ekor DOC strain *Cobb* dibagi kedalam 4 kelompok, 20 ekor per kelompok yaitu kontrol positif (KP), kontrol negatif (KN), kelompok perlakuan 1 (K1), kelompok perlakuan 2 (K2), dipelihara selama 35 hari. Kelompok KP, K1 dan K2 diinfeksi isolat *E. coli* melalui 3 rute yaitu intratrakeal 0,2 ml, intraperitoneal 0,5 ml dan 0,3 ml oral (10^9) CFU pada hari ke 16. Kelompok K1 dan K2 diberi pakan yang dicampur PTLS dengan dosis 5 g/kg selama 7 hari dan 14 hari. Kelompok KN dan KP diberi pakan tanpa PTLS. Ayam yang diinfeksi diamati gejala klinis selama 2-5 hari, seperti bulu kusam dan kasar, ayam terlihat depresi dan mengalami kelemahan. Semua ayam dinekropsi pada hari ke-35. *Escherichia coli* diisolasi kembali dari organ yang mengalami lesi. Hasil pertambahan berat badan (PBB), ALT, AST, dan albumin dianalisis uji *One Way Anova*, sedangkan hasil FCR, gejala klinis, perubahan patologi dan reisolasi dianalisis secara deskriptif dan hasil skoring hati dianalisis dengan uji *Kruskal -Wallis*. Hasil penelitian menunjukkan pemberian PTLS berpengaruh secara nyata ($P < 0,05$) terhadap pertambahan berat badan dan hasil skoring hati, namun tidak berpengaruh secara nyata ($P > 0,05$) terhadap albumin, ALT, dan AST. Nilai FCR (1,6-1,7) lebih besar dibandingkan nilai standar strain *Cobb* (1,5) pada usia 35 hari. Makroskopis hati K1 dan K2 setelah pemberian PTLS mengalami perubahan warna dan beberapa normal. Perubahan pada usus berupa *balloning*, mukosa usus hiperemi dan penebalan, secara histopatologi perubahan pada hati terdapat jaringan fibrin, sedangkan pada usus tampak adanya infiltrasi heterofil, epitel erosi, proliferasi sel epitel kriptal Lieberkuhn, fibroblast dan edema. Hasil uji sensitivitas linkomisin terhadap isolat *E. coli* bersifat intermediet dan kombinasi linkomisin-spektinomisin bersifat sensitif. Kesimpulannya ialah pemberian PTLS mampu mengobati infeksi *E. coli* karena mampu mempertahankan performa, menghilangkan gejala klinis dan memperbaiki struktur jaringan usus dan hati. Pemberian PTLS selama 7 hari lebih efisien dibandingkan dengan pemberian 14 hari.

Kata kunci: Linkomisin-spektinomisin, Pakan terapi, Ayam broiler, *E. Coli*

ABSTRACT

Efficacy of Lincomycin-spectinomycin Combination Therapeutic Feed on Performance, Intestinal Pathology and Liver Function of Broiler Chickens Infected with *Escherichia coli*

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Antibiotics are compounds that can be mixed into poultry feed which is called medicated feed. Colibacillosis is a disease that causes large economic losses. One way to increase the bactericidal ability of antibiotics is by combining antibiotics such as lincomycin and spectinomycin. This study aims to determine the effect of giving lincomycin-spectinomycin (PTLS) therapeutic feed to broiler chickens infected with *E. coli* on body weight gain (PBB), feed conversion ratio (FCR), clinical changes, and liver and intestinal pathology features. Another aim of this research is to determine the effect of PTLS administration on albumin levels, the alanine transaminase (ALT) enzyme and the aspartate transaminase (AST) enzyme, as well as testing the sensitivity of the lincomycin-spectinomycin combination using *E. coli*. Eighty DOC Cobb strains were divided into 4 groups, 20 per group, namely positive control (KP), negative control (KN), treatment group 1 (K1), treatment group 2 (K2), kept for 35 days. Groups KP, K1 and K2 were infected with *E. coli* isolates via 3 routes, intratracheal 0.2 ml, intraperitoneal 0.5 ml and oral 0.3 ml (10^9) CFU on day 16. Groups K1 and K2 were given feed mixed with PTLS. with a dose of 5 g/kg for 7 days and 14 days. The KN and KP groups were fed without PTLS. Infected chickens are observed for clinical symptoms for 2-5 days, such as dull and rough feathers, the chicken looks depressed and experiences weakness. All chickens were necropsied on day 35. *Escherichia coli* was isolated again from the lesioned organ. The results of weight gain (PBB), ALT, AST and albumin were analyzed by the One Way Anova test, while the results of FCR, clinical symptoms, pathological changes and reisolation were analyzed descriptively and the results of liver scoring were analyzed using the Kruskal-Wallis test. The results showed that PTLS administration had a significant effect ($P < 0.05$) on weight gain and liver scoring results, but did not have a significant effect ($P > 0.05$) on albumin, ALT and AST. FCR value (1.6-1.7) is greater than the standard value of Cobb strain (1.5) at the age of 35 days. Macroscopic liver K1 and K2 after PTLS administration experienced color changes and some were normal. Changes in the intestine in the form of ballooning, hyperemic intestinal mucosa and thickening Histopathologically, changes in the liver showed fibrin tissue, while in the intestine there was heterophil infiltration, epithelial erosion, the proliferation of Lieberkuhn crypt epithelial cells, fibroblasts and oedema. The results of the lincomycin sensitivity test against *E. coli* isolates were intermediate and the lincomycin-spectinomycin combination was sensitive. The conclusion is that PTLS administration can treat *E. coli* infections because it can maintain performance, eliminate clinical symptoms and improve the structure of intestinal and liver tissue. Giving PTLS for 7 days is more efficient than giving 14 days.

Keywords: Lincomycin, Spectinomycin, Medicated feed, Broiler chickens, *E. Coli*