

ABSTRAK

PENGARUH PEMBERIAN KOLISTIN TERHADAP GAMBARAN HISTOPATOLOGI HATI DAN GINJAL AYAM BROILER YANG DIINFEKSI *Escherichia coli*

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Kolibasilosis merupakan penyakit yang sering menyerang industri perunggasan dan menimbulkan kerugian yang cukup besar. Kolibasilosis disebabkan oleh *Avian Pathogenic Escherichia coli* (APEC) yang bersifat sistemik dan dapat menyebabkan perubahan-perubahan pada beberapa organ termasuk hati dan ginjal ayam. Kolistin merupakan antibiotik yang bersifat bakteriosidal yang dapat digunakan sebagai terapi penyakit kolibasilosis. Penelitian ini dilakukan untuk mengetahui pengaruh pemberian kolistin pada ayam broiler berkaitan dengan organ hati dan ginjal yang diinfeksi dengan *E. coli*.

Penelitian ini menggunakan 40 ekor *Day Old Chick* (DOC) broiler strain *Cobb CP 707* yang dibagi menjadi 5 kelompok yaitu kelompok perlakuan ECC 1, ECC 2, ECC 3, kelompok kontrol negatif (KTOA) dan kelompok kontrol positif (KEC). Kelompok ECC 1 diberi perlakuan antibiotik kolistin dengan dosis 0,3 gram/kg pakan, kelompok ECC 2 0,6 gram/kg pakan dan kelompok ECC 3 diberikan sebanyak 1,2 gram/pakan. Ayam diberi pakan BR I dan BR II (Comfeed, PT Japfa Comfeed-Indonesia). Kelompok perlakuan ECC 1, ECC 2 dan ECC 3 serta kelompok kontrol positif (KEC) diinjeksi *Escherichia coli* sebanyak 0,2 ml/ekor secara intratrakheal dengan dosis 1×10^8 CFU/ml pada hari ke 17. Pemberian kolistin pada masing-masing kelompok perlakuan dimulai pada hari ke 20 sampai hari ke 24. Pada hari ke 30, tiga ekor ayam dari masing-masing kelompok secara acak dinekropsi dan diambil organ hati serta ginjalnya kemudian dibuat preparat histopatologis dengan pewarnaan Hematoksilin-Eosin (HE) dan hasilnya dianalisis secara deskriptif.

Hasil pengamatan menunjukkan perubahan histopatologis hati pada kelompok perlakuan ECC 3 berupa kongesti, atrofi sel hati dan nekrosis parenkim hati. Perubahan histopatologis pada ginjal kelompok perlakuan ECC 3 berupa kongesti, proliferasi sel pada glomerulus dan infiltrasi sel radang di interstitial ginjal. Berdasarkan penelitian ini, dapat disimpulkan bahwa pemberian antibiotik kolistin dosis 1,2 g/kg pakan menghasilkan efek terapi yang paling baik dilihat dengan parameter perubahan histopatologis pada hati ayam broiler, sedangkan pemberian kolistin pada organ ginjal tidak menghasilkan perubahan yang signifikan terhadap gambaran histopatologis organ ginjal ayam broiler yang diinfeksi *E. coli*.

Kata kunci : Kolistin, kolibasilosis, histopatologi, hati, ginjal, broiler

ABSTRACT

THE EFFECT OF COLISTINE ON HISTOPATHOLOGICAL FEATURES OF LIVER AND KIDNEY IN BROILER CHICKEN THAT INFECTED WITH *Escherichia coli*

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Colibacillosis is one of disease that often attack poultry, and it can cause great economic losses in poultry industries. Colibacillosis is caused by Avian Pathogenic *Escherichia coli* (APEC). Avian Pathogenic *Escherichia coli* (APEC) infection can cause a systemic problem and damage some organs in chicken include their liver and kidney. Colistine is a bacteriocidal antibiotic that can be used as a therapy for colibacillosis. This research was conducted to determine the effect of colistine administration in broiler chickens associated with their liver and kidney organs that infected with *E. coli*.

Forty strain Cobb Day Old Chick (DOC) were used for this research, they are divided into five groups ; ECC 1, ECC 2, ECC 3 called treatment group, negative control group (KTOA) and positive control group (KEC). Colistine with 0,3 gram/kg feed dose was given to ECC 1 group, while ECC 2 group was given 0,6 gram/kg feed dose of colistine, and the ECC 3 group was given 1,2 gram/kg feed dose of colistine. Chickens are fed with BR I and BR II feed (Comfeed, PT Japfa Comfeed-Indonesia). The ECC 1, ECC 2 and ECC 3 treatment groups and the positive control group (KEC) were injected with 0,2 ml/head (1×10^8 CFU/ml) *Escherichia coli* trough intratracheal route on 17th day. On the 20th to 24th day, colistine was given to the treatment groups. On 30th day, liver and kidney of three chickens from each groups were randomly selected and necropsied. The histopathological preparations is made from that organs. The histopathological sample were stained with Hematoxylin-Eosin (HE). Descriptive analysis is used to determine the result.

The descriptive observation on histopathology changes of liver of ECC 3 group sample has found congestion, liver cell atrophy and liver parenchyma necrosis. Histopathological changes of the kidney of ECC 3 group has found congestion, cell proliferation in the glomerulus and inflammatory cells infiltration in the renal interstitial. Based of this study, it can be concluded the administration of colistine at a dose of 1,2 g/kg of feed cause the best therapeutic effect with the parameters of histopathological changes in broiler chicken liver, whereas colistine administration does not produce significant changes on kidney histopathology that infected with *E. coli*.

Keywords : Colistine, colibasillois, histopathology, liver, kidney, broiler