

GAMBARAN KLINIS, PATOLOGIS, DAN PERFORMA AYAM BROILER YANG DIINFEKSI *Aspergillus fumigatus* SERTA EFEKTIVITAS PENGOBATAN ANTIFUNGAL

ALFARISA NURURROZI
13 / 356340 / KH / 504

Intisari

Aspergillosis yang disebabkan *A. fumigatus* merupakan infeksi fungi yang paling sering ditemukan pada broiler. Penelitian ini bertujuan mengevaluasi gejala klinis dan patologis perkembangan infeksi aspergillosis yang terjadi pada broiler dan mengetahui efek pengobatan antifungal. Sebanyak 100 ekor DOC broiler strain Lohmann dibagi kedalam 5 kelompok (masing-masing kelompok 20 ekor) dan dipelihara 30 hari dengan pemberian ransum sesuai standar *Lohmann Management Manual*. Kelompok K₀ (kontrol negatif) tidak dilakukan infeksi buatan. Kelompok K₁, K₂, K₃, dan K₄ dilakukan *repeated infection* dengan spora *A. fumigatus* $1,7 \times 10^8$ spora/ml secara injeksi intra *air sac* pada hari pemeliharaan ke 1, 2, dan 3. K₁ tidak diobati sedangkan K₂, K₃, dan K₄ masing-masing diterapi dengan itraconazol 5 mg/kg, nistatin 300.000 IU/kg dan terbinafin 10 mg/kg PO, selama 5 hari mulai hari pemeliharaan ke 5. Perkembangan penyakit selama infeksi maupun terapi diamati secara klinis setiap hari, kemudian dilakukan sampling pemeriksaan patologis pada H5, H14, dan H30. Performa ayam yang diamati adalah konsumsi pakan, pertambahan bobot badan, *feed conversion ratio* (FCR), dan indeks performa (IP). Data gambaran klinis dianalisa secara deskriptif, perubahan patologis dianalisa menggunakan program SPSS non parametrik *Kruskal-Wallis* dilanjutkan dengan *Mann Whitney test*, sedangkan data performa ayam analisis dengan Anova.

Gejala klinis aspergillosis mulai teramati H3 (72 jam p.i) berupa anoreksia, letargi, dyspnea dan *gasping*. Gejala klinis konsisten teramati hingga H7, mulai menurun mulai hari H8, dan hilang mulai H12. Perubahan patologis pasca infeksi secara konsisten terdapat pada *air sac* dan pulmo. Pengobatan menunjukkan perbaikan secara klinis dengan berkurangnya jumlah ayam yang sakit dan perbaikan makroskopik organ. Namun demikian, secara histologis tidak terdapat perubahan signifikan. Aspergillosis menyebabkan produktivitas dan performa ayam tidak mencapai standar. Pengobatan dengan itraconazol, nistatin, dan terbinafin tidak mampu memperbaiki performa ayam ($P > 0,05$) sehingga berat badan yang dihasilkan lebih rendah, FCR yang lebih besar, dan indeks performa di bawah kelompok yang tidak diinfeksi.

Kata kunci : Aspergillosis, broiler, gambaran klinis, patologis, performa

CLINICAL SIGNS, PATHOLOGY, AND PERFORMANCE OF BROILER INFECTED WITH *Aspergillus fumigatus* AND EFFICACY OF ANTIFUNGAL TREATMENT

ALFARISA NURURROZI
13 / 356340 / KH / 504

Abstract

Aspergillosis, which is caused by *A. fumigatus*, is a common fungal infection found in broiler. This research is aimed to evaluate the clinical signs and pathological development of aspergillosis infection in broiler, and study the effect of antifungal treatment. A total of 100 Lohmann-strain broiler DOCs were divided into 5 groups (20 DOCs per group). The chicks were reared for 30 days, and fed as according to the *Lohmann Management Manual*. The negative control group, K₀ was not infected with the spores. Repeated infection of *A. fumigatus* spores was performed on groups K₁, K₂, K₃ and K₄ with 1.7×10^8 spores/ml injection into the air sac, on days 1, 2 and 3. Group K₁ was not treated whilst groups K₂, K₃ and K₄ were treated perorally with 5mg/kg of itraconazole, 300.000 IU/kg of nystatin and 10mg/kg of terbinafine respectively, for 5 days starting from day 5. The clinical progression of the disease throughout the period of both infection and therapy was observed and recorded twice daily. Pathological samples were collected on Days 5, 14 and 30 to be examined. The chickens' performance in terms of feed consumption, increment in body weight, feed conversion ratio (FCR), and performance index was observed. Data on clinical signs were analysed descriptively, pathological changes were analysed with the non-parametric *Kruskall-Wallis* SPSS programme followed by the *Mann Whitney Test*, and the chickens' performance was analysed with Anova.

Clinical signs of aspergillosis start to appear on day 3 (72 hours p.i) in the form of anorexia, lethargy, dyspnea and gasping. Consistent clinical signs were observed until day 7, then decreasing on day 8, and finally disappearing from day 12 onwards. Consistent pathological changes were observed in the air sacs and lungs. Treatment showed clinical improvement with reduced number of sick chickens and macroscopic improvement of the organs. However, no significant changes were observed histologically. Aspergillosis causes lowered productivity and low standard performance of chickens. Treatment with itraconazole, nystatin and terbinafine was unable to improve chickens' performance ($P > 0,05$), resulting in low body weight, high FCR and low performance index as compared to uninfected chickens.

Keywords: Aspergillosis, broiler, clinical signs, pathology, performance