Clinical Management of Pneumonic Pasteurellosis in Boer Kids: A Case Report

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Abstract
Pneumonic pasteurellosis caused by Mannhaemia haemolytica (M. haemolytica) is a common disease with high prevalence in sheep and goats. This clinical case reports the occurrence of pneumonic pasteurellosis in two of Boer-crossed kids. Two Boer-crossed kids age 1-week old, were presented with complain of in appetence and weakness. The farm had previous history of sudden death among the kids. Clinical examination findings revealed that the kids were having harsh lung sound with present of bilateral serous nasal discharges. Nasal swabs and fecal samples were collected as diagnostic work-ups and both kids were diagnosed with pasteurellosis. The kids were treated with dextrose fluid, penicillin-streptomycin antibiotic and flunixin meglumine non-steroidal anti-inflammatory drug. After third day of hospitalization, both kids showed positive response to the treatments. The prognosis of this case was good where accurate and prompt treatment were able to resolve the case.

Key words: Pneumonic pasteurellosis, Kids, Clinical, Management

Introduction

Pneumonic pasteurellosis is an infection of the genera *Pasteurella* and *Mannheimia* (Blood et al 2011). The causative bacteria include *Pasteurella multocida* types A, B, C and D and *M. haemolytica* types A and T (Kahn 2005). Both organisms are non-motile gram negative rods which are commensal of the upper respiratory tract of sheep and goats. However, *M. haemolytica* is the primary agent of pneumonic pasteurellosis also known as shipping fever (Tefera et al 2001; Kaoud et al 2010). The most important predisposing factor contributing to pasteurellosis is stress. Stress factors such as, transportation, housing, climate, diet, concurrent diseases and worm burden could alter the normal homeostasis of the host

(Zamri-saad et al 1994; Brogden et al 1998). Clinical signs such as coughing, present of bilateral mucopurulent discharges, emaciation, inactive and sudden death may occurred in affected animals (Kahn 2005). Young animals are more susceptible than adults and they develop more severe infection in which sudden death may occur with or without any previous warning clinical signs (Mohamed et al 2008). In lambs and kids, pneumonic pasteurellosis may be acute, characterized by fever, listlessness, poor appetite and sudden death. Lambs and kids that survive the acute stage may recover or become chronically affected showing reduced lung capacity and weight gain efficiency and sporadic deaths may occur (Brogden et al 1998). This clinical case reports the occurrence of pneumonic pasteurellosis in a herd of Boer-crossed kids, accurate and prompt treatments were able to resolve the case successfully.

Case Report

History

Two Boer-crossed kids age 1-week old weighing 7 kg and 7.5 kg respectively were presented to University Veterinary Hospital, Universiti Putra Malaysia with primary complains of inappetence and weakness. The kids were managed intensively where the deworming status were up-to-date. The farm had previous history of sudden death occurred in a few kids.

Clinical Examination

Clinical examination findings revealed that the first kid (Figure 1) was dull, depressed and recumbent. The mucous membrane was pale with capillary refill time more than 2 seconds indicating dehydration. The joint area was swollen and warm upon palpation. On the other hand, the second kid (Figure 2) was dull but alert and responsive. The kid was also dehydrated and was pyrexic 40.0°C. Both kids were having harsh lung sound with present of bilateral serous nasal discharges. The differential diagnoses at that point of time were pasteurellosis, parasitic gastro-enteritis or malnutrition.

Figure 1: First kid

Figure 2: Second kid

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Diagnosis Work-Ups

Nasal swabs were collected from the nostrils of both kids and were sent for bacterial isolation and identification. Fecal samples were also collected and were sent for detection of parasitic infections. The results of parasitological examinations of fecal samples showed no significant findings in worm count. In contrast, there were pure growths of small, smooth and greyish glistening translucent colonies on blood agar after 24 hours incubation at 37°C (Figure 3). Gram-stained of the colonies showed gram-negative, short, ovoid, bipolar staining coccoid forms. Based on the bacterial culture, both kids were diagnosed with pasteurellosis due to *M. haemolytica*.

Figure 3: Small, smooth and greyish glistening translucent colonies of *M. haemolytica*

Treatment

The therapeutic plan for this case was to rehydrate the kids along with treatment for pasteurellosis. The kids were administered with dextrose fluid subcutaneously for rehydration once daily for 3 days. Besides that, flunixin meglumine 2.2mg/kg as anti-inflammatory and analgesic, as well as penicillin-streptomycin 1ml/16kg as broad spectrum antibiotic were administered intramuscularly once daily for 3 days. After day 3 hospitalization, both kids showed positive response to the treatments where the harsh lung sounds had resolved. The prognosis in this case is good as the kids were treated promptly.

Discussion

Pasteurellosis or commonly known as shipping fever is the most common problem faced by small ruminant holders in Malaysia especially during the monsoon seasons. Besides environmental stress, nutritional and poor husbandry stresses also contribute to the development of pasteurellosis in sheep and goats leading to great economic losses (Zamri-saad et al 1994). This disease is endemic and it is

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responsible for 39% of the mortalities in the small ruminant industry (Donachie et al 1995). The global economy impact of the disease is very well recognized where one billion dollars are annually lost due to pasteurellosis (Mohamed et al 2008). The catastrophic effect of this disease can be reduced significantly with proper control and prevention. Administration of antibiotics such as penicillin, sulfadiazine-trimethoprim, tetracycline and macrolide are recommended for the treatment and early control of pasteurellosis in goats (Donachie 2000). Based on an antimicrobial susceptibility tests, *M. haemolytica* is most susceptible to ampicillin, penicillin and tetracycline (Shiferaw et al 2006). In this case, both kids were treated with pen-strep a broad spectrum antibiotic which is a penicillin-streptomycin base effective against *M. haemolytica*. In addition to treatment, vaccination is also important in the control of pasteurellosis (Zamri-Saad et al 1994). Kids that received adequate colostrums from vaccinated does within the first 24 hours of birth will only have passive immunity against pasteurellosis for their first 4 weeks of life. Vaccination of the lamb is necessary to build its own active immunity and continued resistance to the disease (Akan et al 2006; Tesfaw et al 2014). Nevertheless, vaccination against pasteurellosis is not vastly practiced in Malaysia. In relation, to this case, the farmer did not practice any vaccination programme leading to few deaths. This is probably due to the unpopularity of the usage of vaccine among farmers or improper vaccination program provided by the vaccine manufacturer (Zamri-Saad et al 1994).

Conclusion

In conclusion, pasteurellosis in this case occurred due to many factors such as climatic change, poor diet and husbandry. However, the chances for recovery are high when the kids were treated promptly and affectively. This disease can be control effectively with early treatment and proper vaccination program to prevent unnecessary economic losses.

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