



## Short Communication

### An outbreak of *Klebsiella pneumoniae* infection in a rabbit farm

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#### A B S T R A C T

##### Keywords

Rabbit,  
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Ailing and recently weaned dead rabbits were brought to the department of Veterinary Microbiology, VC&RI, Namakkal with the history of severe respiratory distress, mild enteritis and high mortality. Necropsy was conducted and samples were collected and subjected for bacteriological examination. *Klebsiella pneumoniae* was isolated in pure culture and the antibiotic sensitivity test showed sensitivity only to Enrofloxacin. The remaining rabbits in the farm were treated with Enrofloxacin and the infection was controlled.

## Introduction

*Klebsiella Pneumoniae* is an opportunistic pathogen of domestic animals recovered from pneumonia and suppurative infections of foals; cervicitis and metritis in mare; mastitis in cow; wound infections, urinary tract infections, septicemia and pneumonia in dogs. *Klebsiella Pneumoniae* infection in rabbit is rare and usually associated with enteric form of infection. The present report describes an outbreak of *Klebsiella Pneumoniae* associated with respiratory form along with septicemia in a rabbit farm in Coimbatore district of Tamil Nadu.

## Materials and Methods

A rabbit farm owner brought ailing and dead rabbits to the Department of Veterinary Microbiology, VCRI, Namakkal.

Rabbit farm is located in Coimbatore district of Tamil Nadu. History of anorexia, severe respiratory distress, mucus discharge from the nostril, mild enteritis and recumbence few hours before death in the affected rabbits and 20% mortality in total of 1200 rabbits were reported by the farmer. Clinical signs mostly exhibited by recently weaned animals.

Necropsy was conducted and the blood smears were prepared from heart blood and the impression smears were prepared from Lungs, liver and spleen; stained with Leishman's stain to demonstrate the causative organisms. For primary isolation of the organism the Heart blood swabs and tracheal swabs were inoculated on Nutrient agar and MacConkey agar according to methods described by Quinn *et al.* (1994).

Isolated organisms were characterized by gram staining, negative staining and biochemical tests viz., catalase, oxidase, lysine utilization, ornithine utilization, urease, phenylalanine deamination, H<sub>2</sub>S production, citrate utilization, voges proskauer's, methyl red and fermentation of sugars viz., glucose, galactose and lactose as per methods described by Cowan and Steel (1965). Antibiotic sensitivity test was performed for the isolated organism by the Kirby-Bauer disk diffusion method (NCCLS, 1997).

## Results and Discussion

Staining, cultural examination and biochemical tests of isolated organism revealed lactose fermenting, gram negative, rod to coccobacillus shaped, capsulated and non motile bacterium suggestive of *Klebsiella pneumoniae* (Quinn *et al.*, 1994). The outbreak occurred during summer season in recently weaned rabbits. Necropsy revealed accumulation of mucus in the trachea, mild pneumonic changes in the lung, slight enlargement of spleen and no observable changes in other organs. Coletti *et al.* (2001) reported mucous catarrhal enteritis and petechial hemorrhages in the cecal wall, pale liver and slightly enlarged spleen in *Klebsiella pneumoniae* infection of weaned rabbits. But, in the present outbreak, there was a predominant pneumonic and septicemic signs were observed with mild enteritis.

Antibiotic sensitivity test of isolated *Klebsiella pneumoniae* showed resistant to most commonly used antibiotics except enrofloxacin. Babini and Livermore (2000) described that commonly *Klebsiella pneumoniae* is characterized by a high resistance to the antimicrobials. Antimicrobial therapy continues to be important in reducing losses due to enteric

forms of *Klebsiella pneumoniae* subsp. *pneumoniae* (*K. pneumoniae*) disease in rabbit intensive farms, in which this bacterium is frequently isolated from the gastrointestinal tract of suckling rabbits, between the 2<sup>nd</sup> and 4<sup>th</sup> weeks of age, showing a case history of diarrhoea (Boucher and Nouaille, 1996).

Enrofloxacin was administered to the affected rabbits at a dose rate 10 mg/ Kg orally for five days and the mortality rate was reduced gradually by the 3<sup>rd</sup> day of initiation of treatment.

## References

- Babini, G.S., Livermore, D.M. 2000. Antimicrobial resistance amongst *Klebsiella* spp. collected from intensive care units in Southern and Western Europe in 1997–1998. *J. Antimicrob. Chemother.*, 45 : 183–189.
- Boucher, S., Nouaille, L. 1996. Manuel pratique des maladies des lapins. *France Agricole éd., Paris*, 256 Pp.
- Coletti, M., Passamonti, F., Del Rossi, E., Franciosini, M.P., Setta, B. 2001. *Klebsiella pneumoniae* infection in Italian rabbits *Vet. Rec.*, 149:20.
- Cowan, S.T., Steel, K.J. 1965. Manual for the identification of medical bacteria. Cambridge University Press, Cambridge. Pp. 136–138.
- NCCLS, 1997. Performance standards for antimicrobial disk and dilution susceptibility tests for bacteria isolated from animals; tentative standard. NCCLS Document M31-T. Wayne, Pennsylvania, 19087, USA.
- Quinn, P.J., Carter, M.E., Markey, B.K., Carter, G.R. 1994. Veterinary clinical microbiology. Wolfe Publication, London, U.K. Pp. 217–219.