SciDoc Publishers
Infer, Interpret & Inspire Science

International Journal of Veterinary Health Science & Research (IJVHSR)
ISSN 2332-2748

Contagious Caprine Pleuropneumonia: The Challenging Transboundary Disease of Goats

Editorial

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Contagious caprine pleuropneumonia (CCPP) is a disease with high morbidity (80-100%) and mortality (60-80%) rates. Rapid diagnosis of this devastating disease is essential for its immediate containment. *Mycoplasma capricolum* subsp. *capripneumoniae* (formerly Mycoplasma biotype F-38), a member of the family *Mycoplasmataceae,* is the cause of the contagious caprine pleuropneumonia.

CCPP causes major economic losses to goat production in at least 30 African and Asian countries in containing a total goat population of more than 300 million.

Direct costs of CCPP are high mortality rates, reduced milk and meat production, treatment and control costs. While indirect costs is trade restrictions.

CCPP is thought to be a major threat to the goat farms especially in the developing countries whereas the disease is pandemic (Africa, the Middle East and Asia).

Contagious caprine pleuropneumonia transmission occur through close and direct contact by inhalation of air containing mycoplasma (Aerogenic route). Flare up of the infection usually seen in high falling rain seasons. This is occur due to shedding of the organism from carrier cases in the environment after they face stress due to abrupt climatic changes. The outbreak of the disease usually occur when there is introduction of a new infected animal into susceptible herds. The infection is highly contagious and need only short time of contact between animals to cause successful transmission through coughing.

Due to difficulty of isolation of *M. capripneumoniae* from infected clinical samples, its occurrence has not been confirmed in all countries thought to be infected. Most probably, reports of its occurrence are based on clinical signs. CCPP is strictly a respiratory disease. It can be presented in different form in endemic areas, Peracute, acute and chronic forms. The affected goats with peracute form may die in a period of 1 - 3 days show minimum clinical syndromes. While in the acute form, the signs started with very high fever (41-43°C), followed by anorexia and lethargy, then cough start with difficult respiration. There is frequent cough that is violent and productive. At last stage of the disease, the animal be unable to walk and move and with specific posture (widening of the front legs apart with the neck extended and stiff). Continuous salivation occur from the mouth, and the animal may show grunting and pain. Frothy nasal discharge from the nose with frothy nature and salivation and stringy saliva may be seen terminally. The disease can cause abortion to the pregnant goats. The death of affected goats with acute form will occur within 7 to 10 days. In the Subacute or chronic forms, the cases tend to be mild. The animal have cough. In the chronic form of CCPP there are chronic cough, nasal discharge and debilitation. The characteristic post mortem lesions of the CCPP includes, fibrinous pleuro-pneumonia and infected lung shows increased pleural fluid with straw colored.

Filed diagnosis of CCPP depends on the presence of specific clinical signs and positive Latex agglutination test (LAT). LAT is based on a polysaccharide isolated from *Mycoplasma capricolum* subsp. *capripneumoniae*, which is used to sensitizelatex beads. The sensitized latex beads are then used to detect serum antibodies from goats infected with CCPP.

The golden method for confirmatory diagnosis of CCPP is the isolation of the *Mycoplasma capricolum* subspecies *capripneumoniae* from clinical samples from live or postmortem animal. The best and appropriate sample that to be taken to isolate *Mycoplasma capricolum* subspecies *capripneumoniae* is pleural fluid that taken from postmortem or live goat with the disease. The main problem that facing isolation of the *Mycoplasma capricolum* subspecies *capripneumoniae* is that organism has slow growth, which give the chance for contamination with other Mycoplasma or aerobic bacteria.

The best method for controlling of CCPP is the vaccination of susceptible goatherds. Therefore, research has focused on the development of a vaccine that will prevent serious epidemics of the disease in goats.

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Received: January 17, 2017
Published: February 21, 2017

Citation: El-Deeb WM (2017) Contagious Caprine Pleuropneumonia: The Challenging Transboundary Disease of Goats. *Int J Vet Health Sci Res.* 5(1e), 1.

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