

THE TREATMENT EFFECT OF OXYTETRACYCLINE AND VITAMIN C IN AN EPISODE OF PARAINFLUENZA SHEEP IN TIMIS COUNTY

EFFECTUL TRATAMENTULUI CU OXITETRACICLINĂ ȘI VITAMINA C ÎNTR-UN EPISOD DE PARAINFLUENȚA OVINĂ ÎN JUDEȚUL TIMIȘ

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Cuvinte cheie: *oaie, pulmon, virus, bronhopneumonie.*

Abstract

Sheep parainfluenza It is a disease with high diffusibility, sometimes with fatal serious, especially youth. It is caused by parainfluenza 3 virus (PI-3), identical to the bovine parainfluenza virus isolate, in combination with certain bacteria. PI-3 virus was firstly isolated from Hore et al. (1966) in the lungs and nasal mucus of sheep with pneumopathies and Gilmour et al (1968) successfully experimenting with an inactivated vaccine for the prophylaxis of diseases. In our country, parainfluenza sheep was diagnosed in 1977 by pathological examinations. Also by pathological examination was differentiated by Maedi-visna disease and pulmonary adenomatosis.

Rezumat

Parainfluența ovină este o boală cu mare difuzabilitate, uneori cu evoluție gravă, mai ales la tineret. Este produsă de virusul parainfluenței 3 (PI-3), identic cu virusul izolat din parainfluența bovină, în asociere cu unele bacterii. Virusul PI-3 a fost izolat pentru prima dată de Hore și col. (1966) din pulmonii și mucusul nazal al oilor cu pneumopatii, iar Gilmour și col (1968) experimentează cu succes un vaccin inactivat pentru profilaxia boli. La noi în țară, parainfluența la ovine a fost diagnosticată în 1977 prin examene morfopatologice. Tot prin examen morfopatologic s-a făcut și diferențierea de boala Maedi-visna și adenomatoza pulmonară.

1. Introduction

Parainfluenza evolving acute, subacute or chronic, depending on the age. Adult sheep, often asymptomatic evolves.

The *acute form* occurs in infants lambs, manifested by acute bronchopneumonia with jetaj sero-mucous, fever and pulmonary symptoms.

Subacute form, more common in youth, evolving sero-mucous secretion and sometimes fever. In fattening and encephalitis have been reported, and vulvar-vaginitis adult sheep and abortion.

In some extensive growth parainfluenza effective in adult sheep evolve as a mixed

infection with salmonella in February-March, with respiratory disorders and abortion.

Chronic form, present in youth and adult sheep, translates hypo trepsia, capricious appetite, bouts of fever, dyspnoea on exertion, with rare coughing fits, but with reduced or absent secretions (2, 7, 8, 10).

The lesions are similar to those of cattle.

The lung presents outbreaks in the previous half compaction red-grey or purplish color, consistency fleshy, arranged lobular, and lobar. Around outbreaks are observed oedema, comprising sometimes the lungs completely. By age, we noticed some histopathological features.

Thus, the lambs of 1-4 weeks bronchitis and bronchiolitis are seen proliferating, with swelling becoming cubic pneumocytes and alveolar epithelium pseudo-acinary take issue with pronounced exudation, epithelial desquamation and sincitialization (3, 5, 6).

Unvaccinated lambs infected in the first days of life, histological changes of lung epithelial advocates type of pneumonia.

Alveolar septa giant cells present in the epithelium and alveolar among cells exfoliate, is in full phagocytic activity.

In these cells, the epithelial and macrophage intra nuclear and intra cytoplasmic inclusions stands, small or large oxyphils and basophils.

Hyperaemia of regional lymph nodes and lymphoid hypoplasia (4, 9, 11).

Over the age of lambs and adult sheep a month is recorded, in addition, activation and proliferation of mesenchymal alveolar septa, per bronchial and perivascular space.

The presence of "*hyaline membranes*" and giant cells are constant elements encountered in influenza infections in humans and calves.

In *regional lymph nodes*, in addition to redness and follicular hyperplasia, highlights macrophages and giant cells, 2-5 nuclei, sometimes with inclusions.

Blast aspects of lymphocytes and plasma cell differentiation in the lungs and lymph nodes are specific immune reactions (3, 5, 8).

Aim

Research has aimed diagnosis of parainfluenza based on macroscopic and histopathological lesions.

2. Materials and methods

The research was conducted during March 2016 - April 2016 through necropsy 5 sheep cadavers, aged 1-3 months, the household Merinos from 12 sheep with clinical signs of respiratory disease in a herd of 120 heads.

Necropsy was performed by specific technique mammals.

Suspected parainfluenza emerged from the necropsy examination of the first body when the lungs was observed purplish-red coloration of both its surface and the section, the consistent being fleshy.

In cutting the trachea was observed a foamed liquid beaten egg white appearance characteristic of pulmonary oedema.

Regional lymph nodes also were hyperaemia. These issues were observed macroscopic later at the other corpses.

Macroscopic examination covered the structural peculiarities modified record (shape, size, color, lobulation, consistency, exam section) and sampling in order to perform microscopic examination.

The samples preparation was carried out as follows: 24 h alcohol fixation at room temperature (prevent the tissue alteration due to the enzymes activity; preserve the tissue texture; improves the optical differentiation), alcohol dehydration (five steps: 70, 80, 90, 100% and 100% alcohol, each step for two hours), clearing with benzene, paraffin wax at 56°C, embedding tissues into paraffin blocks, trimming of paraffin blocks (6 µm), sections mounting on the glass slides (using Meyer albumin), haematoxylin - eosin- metal-blau staining was performed as follows:

- deparaffination of tissue sections in benzene,
- rehydration using decreasing concentrations of alcohol,
- rinsing in distilled water,
- haematoxylin staining,
- alcohol,
- eosin staining water removal using increasing concentrations of alcohol, cover slide mounting.

Haematoxylin will stain the nuclei in blue and the mucins in light blue.

Eosin will stain the cytoplasm in pink, collagenin pale pink, red blood cells in bright red, and colloid in red.

The microscopic examination is useful as differentiating diagnosis method only if chemical preparation of samples is applied (1, 3, 4).

In animals with clinical signs of disease were oxytetracycline and vitamin C was administered by the parenteral route.

3. Results and discussions

External examination of the bodies revealed a small amount of sero mucous secretion around the nasal cavities.

Lung *macroscopic examination*, it was found that it presents compaction outbreaks of red-violet coloration throughout its surface, consists of meaty arranged lobular, docimasy is positive, lobar bronchopneumonia (figures 1, 2), pulmonary oedema (Figure 3). pulmonary congestion (6, 7).

Retropharyngeal lymph nodes, bronchial and mediastinal were hyperaemia. Microscopic were found hyperplasia limfohistiocitary the septa (figures 4, 5) congestion, bleeding, serous exudation or serofibrinoase interlobular and form "pockets per arterial" peeling epithelium broncho-alveolar and sincitialisation of the formation of multinucleated giant cells (lesion pathognomonic) viral intra cytoplasmic inclusions in both transient and in multinucleated giant cells mononuclear macrophages (figures 8, 9, 10).

The sick animals' clinical signs disappeared after 3-4 days after treatment.

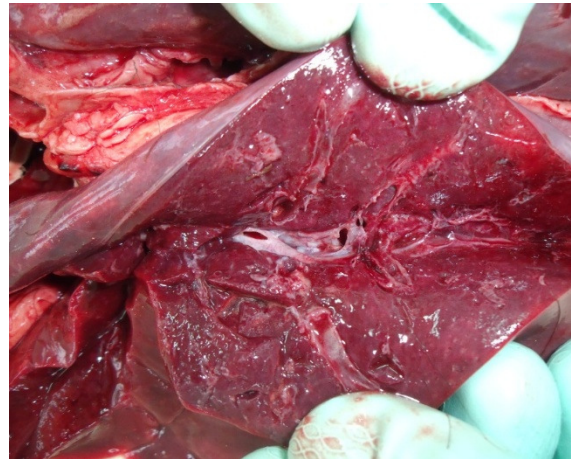


Figure 2. Sheep lung acute evolution. Lobular bronchopneumonia (section examination)

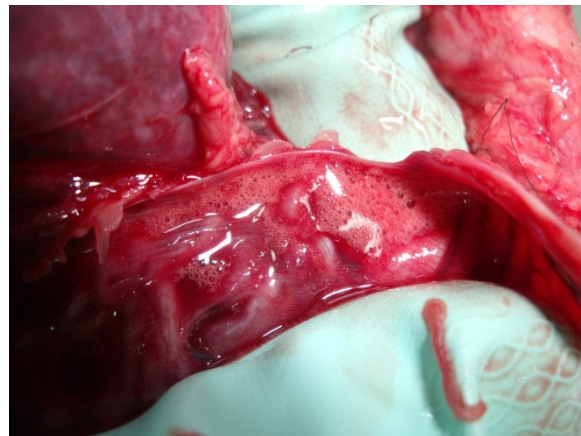


Figure 3. Sheep trachea acute evolution. Haemorrhagic tracheitis, pulmonary oedema



Figure 1. Sheep lung acute evolution. Lobular bronchopneumonia (surface examination)

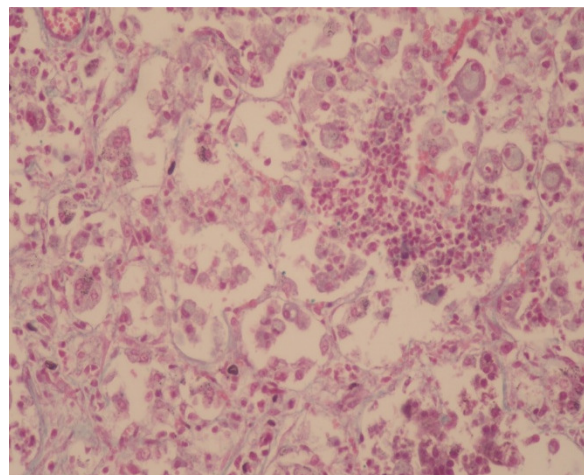


Figure 4. Sheep lung acute evolution. Limphystocitary hiperplasia (HEA x 10)

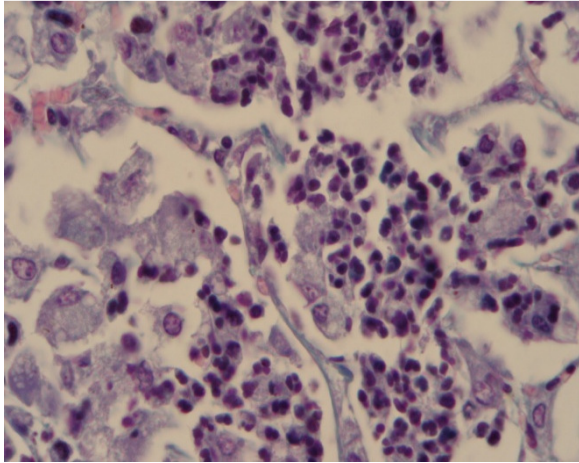


Figure 5. Sheep lung acute evolution
Lymphocytic hyperplasia (HEA.x 40)

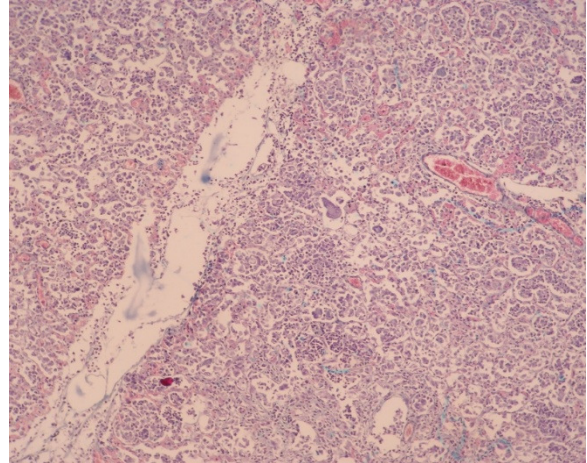


Figure 8. Sheep lung acute evolution
Multinucleated giant cells (HEA.x 10)

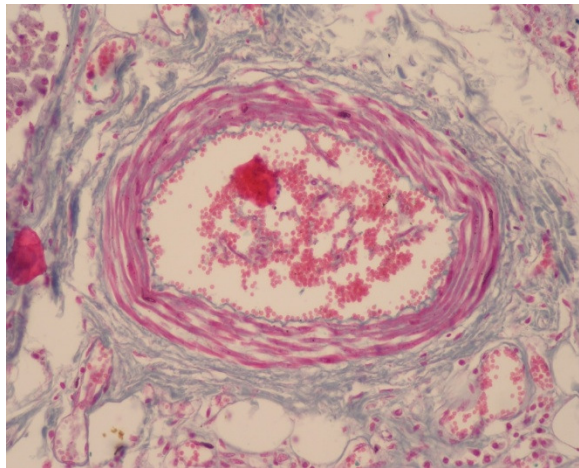


Figure 6. Sheep lung acute evolution
Pulmonary congestion (HEA x 40)

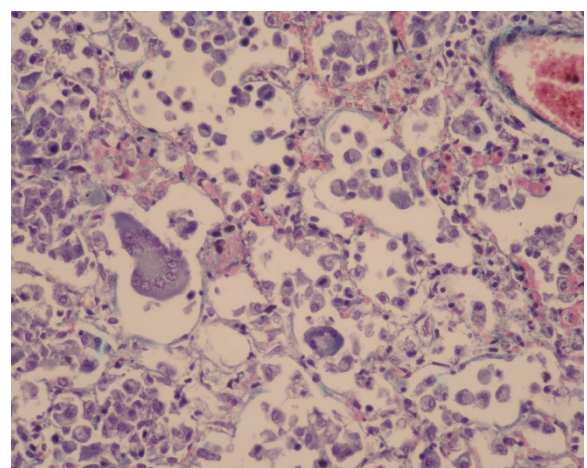


Figure 9. Sheep lung acute evolution
Multinucleated giant cells (HEA x 20)

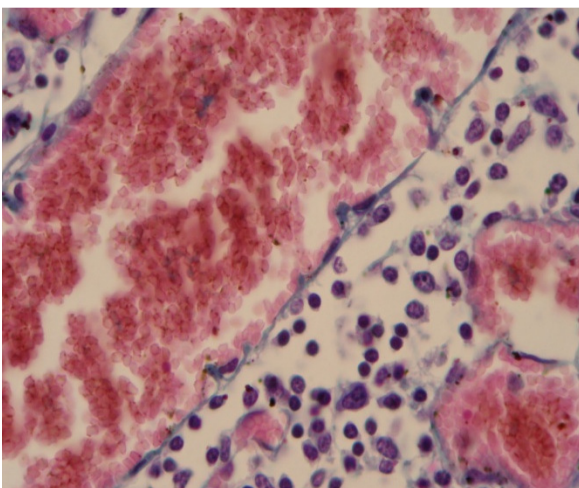


Figure 7. Sheep lung acute evolution
Pulmonary congestion and perivascular
lymphocytic hyperplasia (HEA x 40)

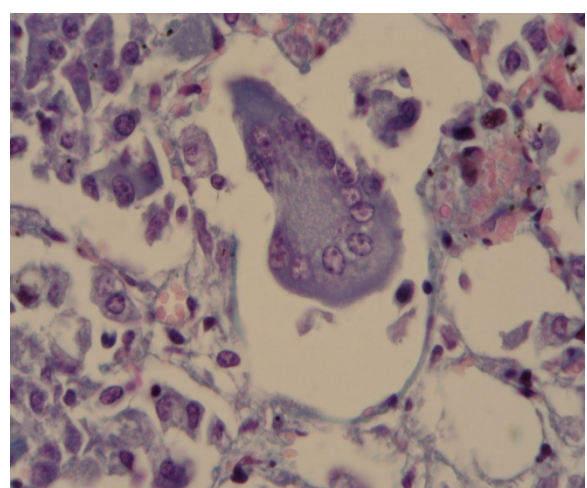


Figure 10. Sheep lung acute evolution
Multinucleated giant cells (HEA.x 40)

4. Conclusions

- **Sheep parainfluenza** was diagnosed in all five corpses necropsied.
- **External examination** of the corpses was revealed a small amount of seromucous secretion around the nasal cavities.
- **Macroscopic examination** of the lungs, it was found that it shows staining foci of compaction of the red-violet color over the whole surface thereof, arranged lobular consists fleshy, docimasia is positive, lobar bronchopneumonia. Retropharyngeal lymph nodes, bronchial and mediastinal were hyperaemia.
- **Microscopically** were identified: lymphocytic hyperplasia in septa, congestion, haemorrhage, serous exudation or interlobular serofibrinous and form "sheath hairs pressure" peeling epithelium broncho-alveolar and syncytialisation of the formation of multinucleated giant cells (pathognomonic lesion) viral intra cytoplasmic inclusions multinucleated giant cells both ephemeral and mononuclear macrophages.
- **Treatment** with oxytetracycline and vitamin C was effective in animals with clinical forms of disease in the case of parainfluenza.

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