



PREPARED BY DR. HARITH ABDULLA NAJEM

# Marek's Disease (MD)

## **Lymphoid leukosis (LL)**

---

PREPARED BY DR. HARITH ABDULLA NAJEM  
COLLEGE OF VETERINARY MEDICINE -  
UNIVERSITY OF BASRAH

# Marek's Disease (MD)

---

MD is a highly infectious disease of chickens characterized by paralysis of wings and legs and presence of lymphoid tumors in various organs, due to mononuclear cell infiltration in the peripheral nerves and various other organs and tissues including iris and skin.

- o **Etiology** :Group of B Herpes virus .
- o **Incubation period** : 4 – 12 weeks .
- o **Course of disease** :- 10 – 12 weeks .

o Method of spread :-

Feather follicles , dander , secretion and excretion .

Air currents .

Carriers .

Beetls , *Alphitobius diaperinus* .

Mortality :- Broilers 1 – 5 % .

Layers 10 – 50 %.

Breeder- hens 5 – 25 % .

Forms of the disease

Nervous form : Classical form .

Visceral form .

Eye form .(Ocular form)

Skin form .(Cutaneous form)

# Clinical signs :

---

- 1.Asymmetric progressive paresis, later complete paralysis of one or more extremities.
- 2.Involvement of vagus nerve can result in paralysis and dilation of crop and /or gasping.
- 3.Incoordination or stilted gait may be the first sign.
- 4.Characteristic sign is one leg stretched forward and the other back due to unilateral paresis or paralysis of the leg(Fan shape posture).
- 5.Pupil becomes irregular in size .
- 6.Iris becomes gray in color .
- 7.Pale shriveled combs .



# Post – mortem lesions:

---

1. Feather follicles are enlarged .
2. Tumors in any tissue or organs .The lesions appear as diffuse enlargement in most organs, focal or nodular may be also observed.
3. Enlarged, edematous and loss of cross- striation of peripheral nerves.(Sciatic and brachial nerves).
4. Many birds may die without lesions due to viremia .

# Differential Diagnosis :

---

1. Lymphoid leukosis .
2. Riboflavin deficiency .
3. Histomoniasis( Black Head Disease).
4. Any disease causing nervous signs .

## o Diagnosis :

1. Signs .
2. Lesions.
3. Histopathology .
4. Viral isolation .

Prevention :- Vaccination. Time of Vaccination Day-old chicks (at hatchery)

# Vaccination

---

## Vaccination – Marek’s Disease (MD)

### Principle

Vaccination does not prevent infection

It prevents tumor formation and clinical disease

Birds may still become infected and shed virus

### Types of Vaccines

HVT (Herpesvirus of Turkey – Serotype 3)

SB-1 (Serotype 2)

Rispens CVI988 (Serotype 1 – most effective)

### Route of Administration

Subcutaneous (neck)

# Lymphoid leukosis (LL)

---

Lymphoid leukosis is a bursal dependent neoplastic disease of adult chickens ( over 14–16 weeks of age). LL characteristically produces lymphoid tumors, particularly in liver and spleen, other visceral organs such as ovary and lungs may also affected .

## Etiology:

Small RNA leukosis / sarcoma virus .

Incubation period: 14 – 30 weeks .

## Method of spread :-

1. Transovarian .
2. Lateral transmission .
3. Blood sucking parasites

# Clinical signs:

---

- 1.The disease is chronic in nature ,but affected birds may die without signs.
- 2.Pale shriveled combs .
3. Progressive emaciation and diarrhea.
- 4.Total loss may approach 20% .
- 5.Losses most severe after onset of egg production
- 6.Abdominal enlargement.
- 7.Blood blisters may occur in the skin ,their rupture causing hemorrhage.

# Post – mortem lesions :

- 
1. Hepatomegaly : The liver is filling the entire abdominal cavity ,(Big Liver Disease). It is firm, fibrous, and gritty.
  - 2.Enlarged bursa of Fabricius .
  - 3.Tumors on the mesentery and other abdominal viscera.
  - 4.Tumors are soft, smooth, and glistening.
  - 5.Tumors may be nodular ,miliary ,diffuse or combination of these forms.
  - 6.Sometime tumors in the bones .

# Diagnosis

---

## Differential Diagnosis:

1. Marek's disease(Visceral form) .
2. Avian tuberculosis .
3. Coligranuloma.
4. Histomoniasis {Black Head Disease} .

## Diagnosis :

1. Signs .
2. Post - mortem lesions:-
  - A. Bursa of Fabricius enlargement .
  - B. Lack of nerve involvement .
3. Histopathology .
4. ELISA.

# Prevention

---

1. Elimination of the virus from breeder hens

.

A. Test and slaughter .

B. Virus is spread to the progeny .

•**Vertical transmission (through eggs)**

•**Immunological tolerance**

2 . Genetic resistant birds.

3 . There is NO effective vaccine for Lymphoid Leukosis.

WHY???

# MD vs LL

---

## Marek's disease

1. Age : Young and adult .
2. Nerves: Are affected .
3. Skin : Is affected .
4. Bursa of Fabricius is mainly not involved.

## L.L

- 1.Age:Over 14 -16 weeks.
- 2.Nerves: Not involved .
- 3.Skin: Is not affected .
- 4.Bursa of Fabricius:Is the target organ.