Infectious Bursal Disease (Gumboro)

Def:

Acute highly contagious disease of young chicks ch.ch.by:

- -whitish soft dropping
- -vent picking
- -trembling
- -incoordination

-involvement of bursa of fabricus with variable degree of immunosuppression

Cause:

IBDV ====RNA Birna viridae

-have 2 serotypes ==serotype I & serotype II

-serotype II, non-pathogenic, isolated from turkey and chicken

-serotype I, pathogenic strain for chickens

-serotype I have different strains:

Mild, Intermediate, Intermediate plus, classical and very virulent

-the virus very stable and resistant to most of disinfectants and environmental factors

-killed by formaldehyde, iodophores and chlorine

-it persists for long time in infected premises

Susceptibility:

-Mainly young chickens 3-6 weeks (clinical infection) transient immunosuppression

-young chickens 2weeks age (subclinical infection) permanent immunosuppression

-recorded in turkey and duck

Source of infections:

1-contaminated food, equipment, walls, ground& premises

2- Rodents, free living birds & human

-no vertical transmissions recoded

Transmission:

1-mainly through ingestion of contaminated food

2-via contaminated premises and fomites

3-mechanically via rodents, beetles &lesser meal worm in ration

Clinical signs:

I-Acute clinical signs

1-sudden onset of whitish soft dropping & trembles

2-some birds picking its own vent & tremors

3-depression with ruffled feather

4-temporary immunosuppression

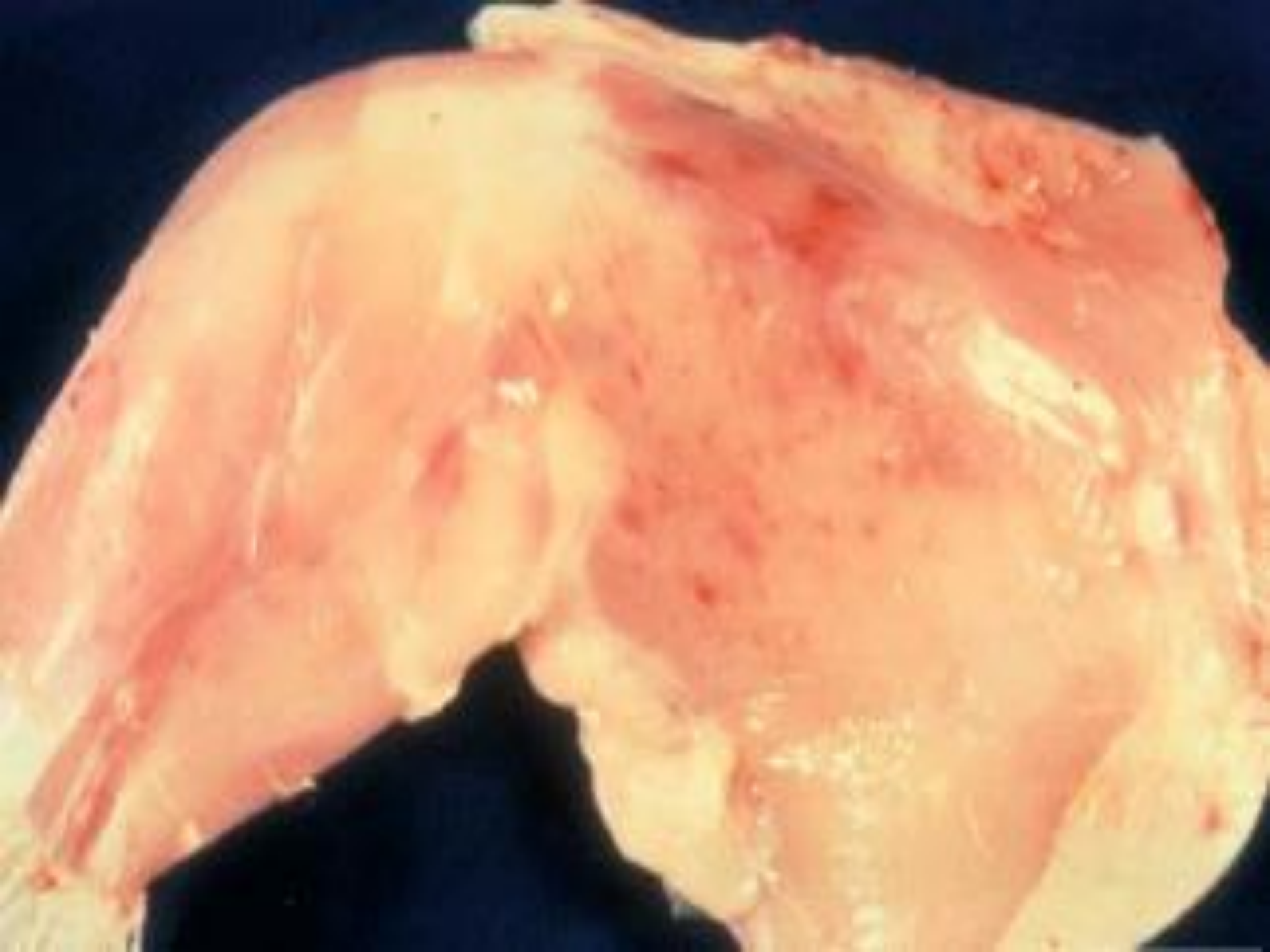
-Mortality and morbidity begins 3 days post infections, peak within 5-7 days

-Mortalities depends on age, virus virulence & immunity either maternal or vaccinal

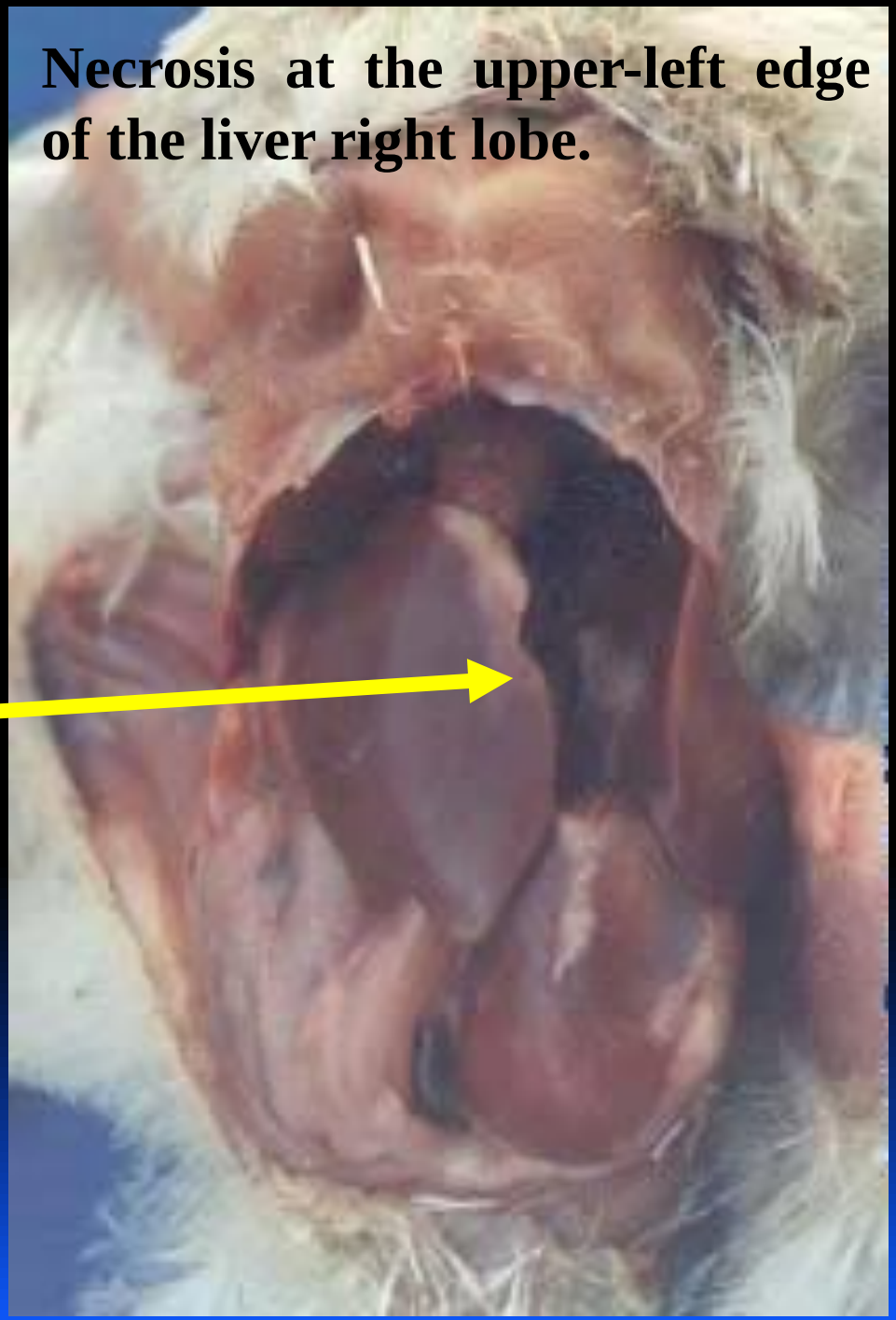
Lesions:

1-dehydrated dark discolored muscles and may streaked with hemorrhages (thigh& pectoral)
2-at the 3rd day PI increase size of bursa, enlarged & reach its maximum at the 4th day (edematous, haemorrhagic& gelatinous)
3-grayish yellowish necrosis in liver
4-sowllen, pale kidneys with ppt of ureates lead to dysfunctions &increase blood ureamia
5-haemoeeghes in the mucosa of the junctions between proventriculous and gizzard
6-opened bursa, gelatinous yellowish translucent materials cover the longitudinal striations with haemorrhagic folds

Hemorrhages in the pectoral muscles .



Haemorrhages in the proventriculus-gizzard junction.


Necrosis at the upper-left edge of the liver right lobe.

An enlarged hemorrhagic bursa of Fabricius.

Bursa of Fabricius - enlarged and haemorrhagic.

Bursa of Fabricius - (section) haemorrhages

II-subclinical form (prior 2 weeks of age)

1-premenant immunosuppression (IB, ND, ILT vaccination failure)

2-increase susceptibility to 2nd infections

3-atrophaied bursa

Diagnosis:

1-clinical signs 2-lesions

3-lab.diagnosis---a-samples---bursa, spleen

b-isolation on CAM , YS of ECE = embryo liver necrosis stained with bile

c-serologically by AGPT,IFT&ELISA tests

D.D:

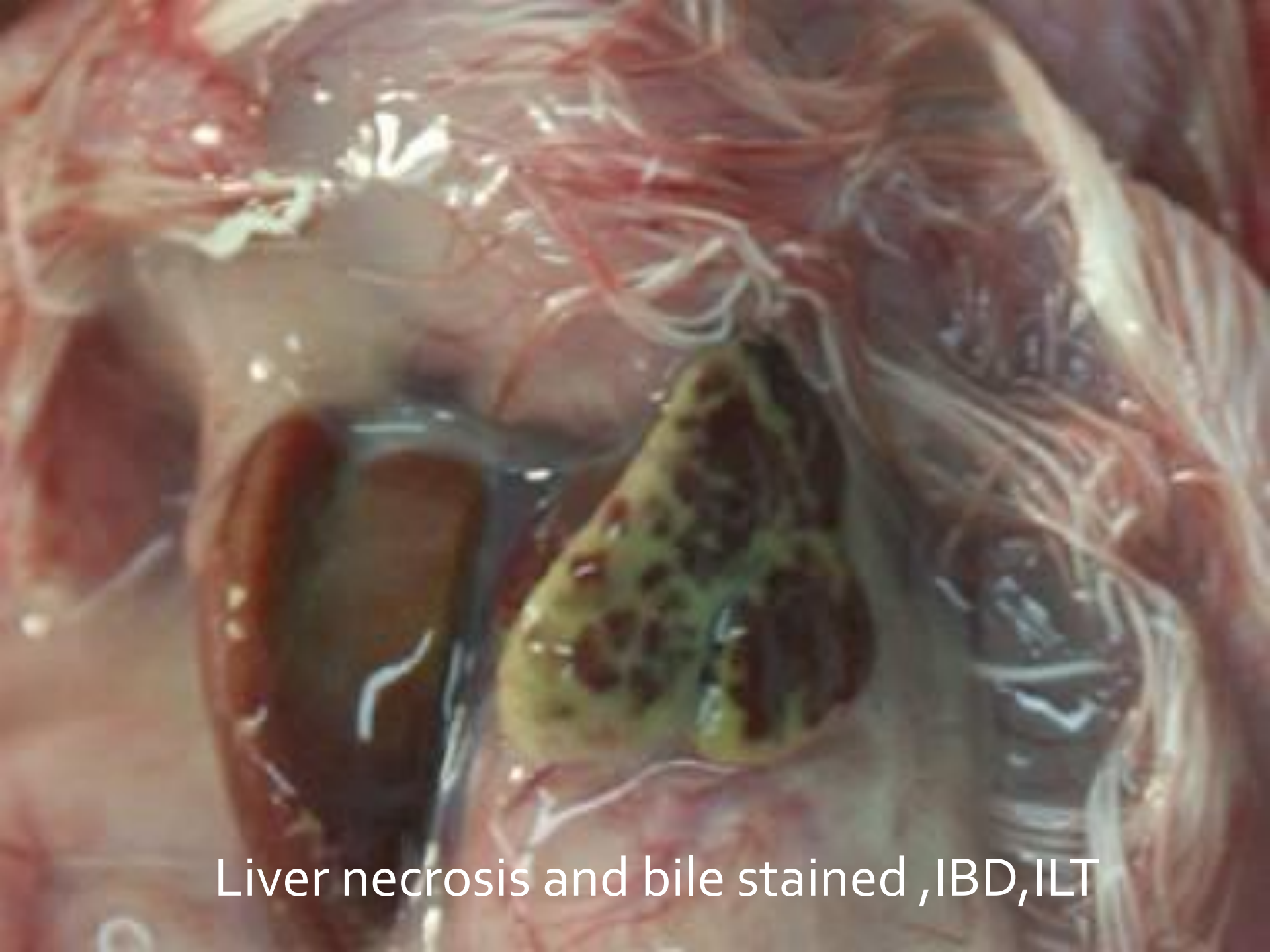
1-coccidiosis

2-mycotoxins

3-IB

4-haemorrhagic syndrome (sulphonamid toxicity, CIA)

Liver necrosis and bile stained ,IBD,



Liver necrosis and bile stained ,IBD,ILT

Prevention & control:

1-strict biosecurity (hygienic measures, cleaning, disinfection)

2-rodents control

3-vaccination(for broiler)

A-mild vaccine ==mild immunity

B-intermediate vaccine ==moderate immunity, interfered by maternal immunity

C-intermediate plus vaccine (hot) ==virulent &may affect bursa, used in case of continue problem

Type=live attenuated vaccine

-time of vaccination---1st dose at 7-10 day of Or at 10-15 day of age
-route—in drinking water or eye instillations
-inactivated vaccine oil adjuvant used in breeders by injection at 16-18 weeks of age and may prime by living vaccine of intermediate strain at 10-14 weeks of age and before laying by 4-6 weeks , this will give maternal immunity for progony 2-3 weeks protections
-may vaccinate at 1 day old with Marek's vaccine

-trial for vaccination at 18 days of embryonation by injection of intermediate vaccine alone or mixed with standard antibodies this will give faster recovery of bursal lesions and can circumvent the maternal antibodies and initiate primary immune response

-before vaccination must measuring level of maternal immunity to avoid its interference with vaccination

4-antibiotics & supportive treatment (vitamins, renal wash) to decrease 2nd bacterial infections