**Chicken Infectious Anemia**

- First identified in Japan in 1979. It was called the chicken anemia agent (CAA) and later referred to as chicken anemia virus (CAV).

- The disease is characterized by aplastic anemia, generalized lymphoid atrophy with concomitant immunosuppression, and subcutaneous hemorrhage.

- Primarily causes T-cells suppression.

- It is often complicated by secondary viral, bacterial, or fungal infections.

- The disease produced in young chickens most frequently involves severe bone marrow depletion with a reduction in hematocrit values.

- It plays a major role in a number of multifactorial diseases associated with hemorrhagic syndrome and aplastic anemia.

**Synonyms**

Hemorrhagic syndrome

Anemia-dermatitis

Blue-wing disease
**Etiology**

- Circovirus – a single stranded, circular DNA virus.
- There is only one serotype but there are variations in pathogenicity.

**Method of Spread**

- Primarily vertical transmission from breeder flocks which become infected during lay.
- The virus is not transmitted from hens which have cleared the infection during the rearing period.
- Lateral spread usually results in subclinical disease.

**Period of Incubation**

- Ten to 14 days in antibody negative hens.
- In natural outbreaks, peak mortality in broilers is commonly observed between 17 to 24 days followed by a second wave of increased mortality between 30 to 34 days of age.

**Mortality**

- Clinical CAV rarely occurs, but occasional outbreaks are generally devastating.
- Mortality is usually 5 to 10% although it has been reported up to 60% in some cases.
**Clinical Signs**

- Anemia is the only specific sign with hematocrit values ranging from 6-27%.
- Normal hematocrit value is 35%.
- Depression, paleness, and anorexia are often seen.
- Lesions on the wing (blue-wing) result from secondary bacterial infections leading to gangrenous dermatitis.

**Postmortem Lesions**

- Hemorrhages can be observed in the skin and musculature. The bone marrow is pink to yellow in color.
- Thymic atrophy is obvious. Changes in the bursa of Fabricius are less obvious.

**Histopathology**

- Bone marrow depletion; erythrocytes, thrombocytes, and granulocytes are replaced by adipose tissue.
- Other lymphoid tissues including spleen and bursa of Fabricius are also atrophic but to a lesser degree and for a shorter duration.
**Diagnosis**

- Flock performance history, signs, postmortem lesions, and the presence of other related diseases such as gangrenous dermatitis, and hemorrhagic syndrome.
- Low hematocrit values.
- Virus isolation from infected livers. Inoculate the virus into susceptible day-old chicks.
- Follow with virus neutralization using MSB1 cell culture to detect seroconversion.
- Indirect FA or ELISA tests are also available.

**Prevention and Control**

- Infection and seroconversion of breeder flocks during the rearing phase.
- Monitor for the presence of antibodies at 10-12 weeks of age.
- Artificial exposure is accomplished by the transfer of contaminated litter.
- A commercial vaccines has recently been approved for use in the United States.
- This vaccine is given via the wing web stab between 10 and 18 weeks of age. It should not be administered later than 6 weeks before the onset of egg production.