



Canine herpesvirus infection

By

Dr/ Marawan Elfky

Definition

➤ A severe viral infection of canine ch. By:

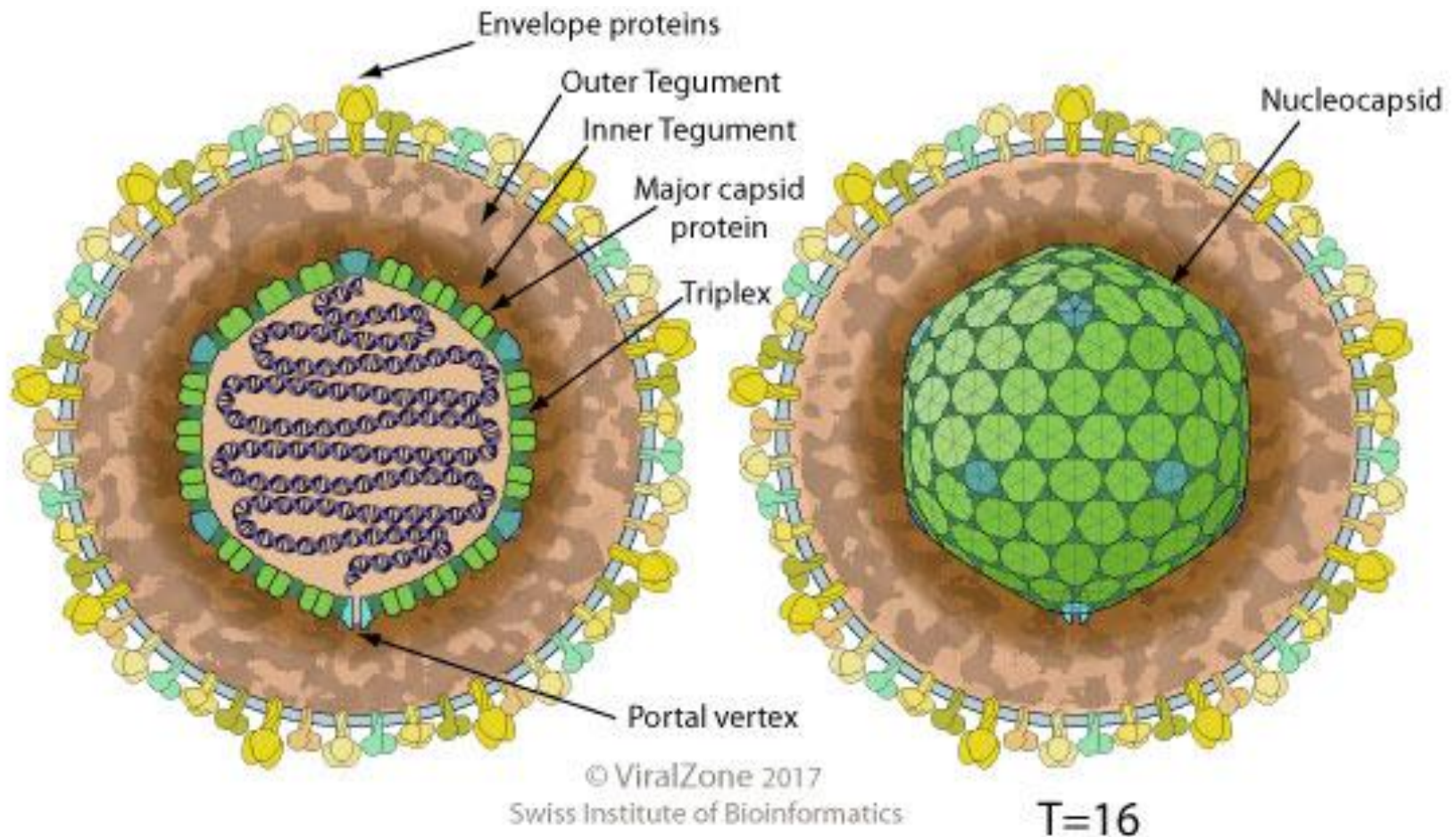
❑ **Puppies:** 100 % mortality

❑ **Adult:** suffer from with upper respiratory infection, ocular disease, vesicular vaginitis or posthitis.

❑ **Recovered** from clinical disease is associated with lifelong **latent infection**.

Etiology

- **CHV-1:** Family *Herpesviridae*, subfamily *Alphaherpesvirinae*, genus *Varicellovirus*.
- Large enveloped DNA virus.
- **Sensitive** to heat, lipid solvents (such as ether and chloroform) and most disinfectants.
- **Resist very cold temp. (stable at -70 °c).**



Enveloped, spherical to pleomorphic, 150-200 nm in diameter, [T=16 icosahedral symmetry](#). Capsid consists of 162 capsomers and is surrounded by an amorphous tegument. Glycoproteins complexes are embed in the lipid envelope.

Epidemiology

1. **Distribution:** Worldwide and present in Egypt.
2. **Host rang:** (Dogs).
 - Common at 1-3 w and pregnant bitch & rare in older dogs than 4 m.
3. **Seasonal incidence:** cooler seasons.
4. **Transmission:**
 - a. **Source:** ocular, nasal discharges and vaginal discharges.

b. Mode:

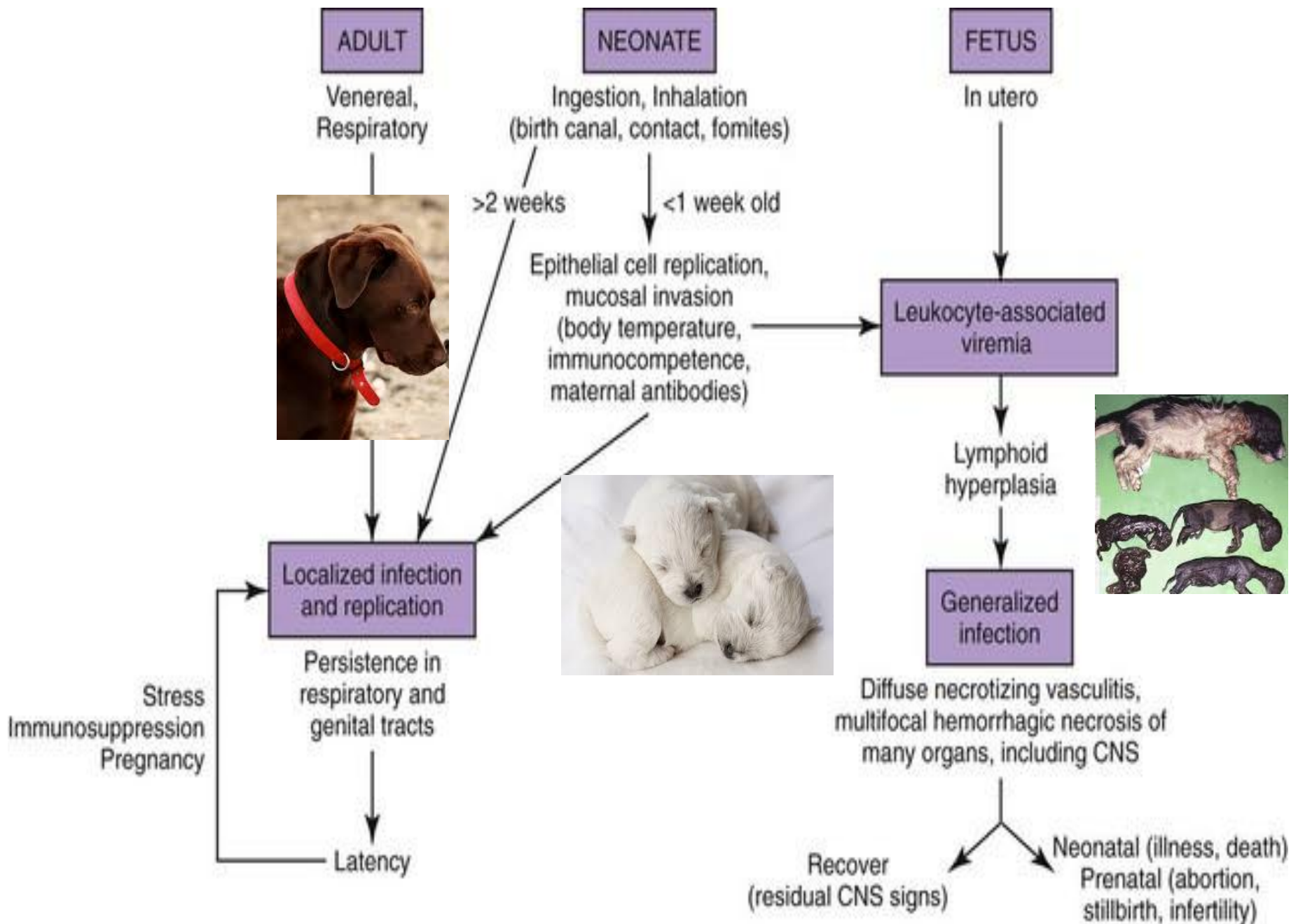
- **Contact** with animal discharges.
- **Inhalation & ingestion.**
- **In-utero** infection from pregnant bitches to fetuses
- **Venereal.**

5. Economic impact:

- ❖ Loss of dog's function and deaths of valuable dogs.



Pathogenesis



Clinical signs

- I.P up to 7 days
- Course 1-2 weeks (very short in young puppies and death occurs after ≤ 24 hr.
- Morbidity rate is high
- Mortality rate is variable.

1. Young puppies

- Deaths **usually** occur in **puppies 1–3 w** old, **occasionally** in puppies up to **1 m old**, and **rarely** in pups as old as **6 months or more**.
- Fever lethargy, decreased suckling, diarrhea, nasal discharge, conjunctivitis, **corneal edema**, erythematous rash, rarely oral or genital vesicles.
- **Viral pneumonia** with dyspnea and coughing.
- **Leukocytosis** may be present.

2. Older dogs

- **Mild rhinitis**, which may be part of the “kennel cough” syndrome.
- Conjunctivitis and corneal ulcers **in the absence of other upper respiratory signs**.
- Vesicular vaginitis or posthitis.
- Infected pregnant bitches may **abort** or deliver a partially **stillborn** litter; however, they **seldom exhibit other clinical signs**, and future breeding's are likely to be successful.

PM lesions

- Focal **necrosis and hemorrhages** in different organs as lungs, kidney cortex, adrenal glands, liver and intestinal tract.
- **All lymph nodes** are enlarged and hyperemic, and the spleen is swollen.
- **Marked neutrophilic** and mononuclear infiltration is seen in ocular lesions.
- **Basophilic or acidophilic IN IB** are most common in areas of necrosis in the lung, liver, and kidneys.

Diagnosis

1- Field diagnosis; depends on case history, clinical signs and P/M lesions.

2. Lab. Diagnosis;

A. Sample (on ice or formaline):

- Respiratory tract and vaginal secretions or swabs.
- Specimens from internal organs as kidney, liver, adrenal glands and lymph nodes
- Blood & serum.

B. Laboratory procedures:

- **Viral isolation on cell culture.**
- **Molecular assays:** Using PCR assay, nested PCR and real-time PCR, (highly sensitive and specific).
- **Serological assays:** (IFAT), ELISA and SNT.
- **Histopathology:** **IN IB**
- **Hematology:** **Leukocytosis**

Differential diagnosis

- Kennel cough.
- ICH.
- Canine distemper.
- Toxoplasmosis.

Treatment

- Prognosis is bad in young puppies
- No specific treatment but symptomatic and supportive (**prevent secondary infection**).
- Glucose 50% in a dose of 0.5 ml/kg.
- Broad spectrum antibiotic as ampicillin or gentamicin.
- Antiviral agents such as vidarabine

Treatment

- Adult dogs with ocular, respiratory, or genital disease often experience **mild and self-limiting signs.**
- **Ophthalmic antiviral (drops or ointment)**
cidofovir (0.5% bid) has been used successfully in primary ocular infection and may be useful for persistent or painful ocular lesions.

Control

- **Segregation of infected dogs** and treat them symptomatically and destruction all source of infection.
- **Good practices of cleanliness** and sanitation.
- **Isolation of infected pregnant bitch** (3.w prior to parturition) and puppies of up to 3.w age and reared in incubators at 35°C and 50% humidity
- **Examination of animals before breeding for vesicular vaginitis is advocated.**

Vaccination

- **No available vaccine.**



