Diseases of finfish

Viral diseases—**Spring viraemia of carp**

Signs of disease

Important: animals with disease may show one or more of the signs below, but disease may still be present in the absence of any signs.

Disease signs at the farm level

- mortality of 30%–100%

Disease signs at the tank and pond level

- separation from shoal

Clinical signs of disease in an infected animal

- exophthalmus (pop eye)
- swollen abdomen (dropsy)
- petechial (pinpoint) haemorrhages in the fatty tissue and muscle surrounding organs and stomach wall
- haemorrhages on skin

Gross signs of disease in an infected animal

- haemorrhages in gills, abdominal tissue, swim bladder and other internal organs
- ascites (abdominal cavity filled with fluid)

Spring viraemia of carp in European carp. Note characteristic haemorrhagic skin, swollen stomach and exophthalmus ('pop eye')

Source: HJ Schlotfeldt

Disease agent

Spring viraemia of carp (SVC) virus is a rhabdovirus closely related to infectious haematopoietic necrosis virus and viral haemorrhagic septicaemia virus.

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Sourced from AGDAFF–NACA (2007) *Aquatic Animal Diseases Significant to Asia-Pacific: Identification Field Guide.* Australian Government Department of Agriculture, Fisheries and Forestry. Canberra.

Host range

Fish known to be susceptible to SVC:

bighead carp*	(*Aristichthys nobilis*)
common carp and koi carp*	(*Cyprinus carpio*) — species most susceptible
crucian carp*	(*Carassius carassius*)
goldfish*	(*Carassius auratus*)
grass carp*	(*Ctenopharyngodon idellus*)
ide*	(*Leuciscus idus*)
pike*	(*Esox lucius*)
silver carp*	(*Hypophthalmichthys molitrix*)
tench*	(*Tinca tinca*)
wels catfish (sheatfish)*	(*Silurus glanis*)
guppy	(*Poecilia reticulata*)
pumpkinseed	(*Lepomis gibbosus*)
roach	(*Rutilus rutilus*)
zebra danio	(*Danio rerio*)

Nonpiscine carriers include:

heron	(*Ardea cinerea*)
leeches	(*Piscicola* spp)
louse	(*Argulus foliaceus*)

Presence in Asia–Pacific

SVC has been officially reported from China and Iran.

Epidemiology

- SVC is very contagious among common carp.
- Clinical disease is linked closely to environmental disturbances.
- Mortality is usually less than 30% but can range from 5% to 100%, with younger fish being more susceptible.
- Fry are susceptible to disease at temperatures as high as 23°C.
- Disease may also occur in yearlings and older fish at water temperatures below 17°C (associated with the stress of an abnormally cold spring in Europe, and possibly due to cold temperatures weakening the fish's immune system during the spring).
- Fish that survive SVC are presumed to be carriers of the virus.

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* naturally susceptible (other species have been shown to be experimentally susceptible)

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- Outbreaks are most likely occur with increased stress levels, such as around spawning and coinciding with increased levels of virus excreted to water with spawning fluids.
- Transmission of the virus to uninfected fish is via water, and the virus enters fish through the gills and skin.
- The virus enters the water in faeces, urine and spawning fluids, as well as external (skin and gill) mucus, discharge from skin blisters, contaminated transport water and contaminated eggs of infected fish (suggestive of vertical transmission).
- Blood-sucking parasites such as anchorworm and leeches can transmit the virus from carp to carp.
- Stress, such as from overcrowding, can trigger an outbreak in seemingly healthy populations.

Differential diagnosis

The differential diagnostic table and the list of similar diseases appearing at the bottom of each disease page refer only to the diseases covered by this field guide. Gross signs observed might well be representative of a wider range of diseases not included here. Therefore, these diagnostic aids should not be read as a guide to a definitive diagnosis, but rather as a tool to help identify the listed diseases that most closely account for the gross signs.

Similar diseases

Infection with *Aeromonas salmonicida* — atypical strains, enteric septicaemia of catfish, enteric red mouth disease

Sample collection

Because of uncertainty in differentiating diseases using only gross signs, and because some aquatic animal disease agents might pose a risk to humans, you should not try to collect samples unless you have been trained. Instead, you should phone your national hotline number and report your observations. If samples have to be collected, the agency taking the call will advise you on what you need to do. Local or district fisheries/veterinary authorities could advise you on sampling.

Emergency disease hotline

For your national emergency disease hotline number, see Whom to contact if you suspect a disease.

Further reading

http://www.oie.int/aac/eng/cards/en_diseasecard.htm

The currently accepted procedures for a conclusive diagnosis of SVC are summarised at http://www.oie.int/eng/normes/fmanual/A_00021.htm

These hyperlinks were correct and functioning at the time of publication.

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