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African Horse Sickness:
Clinical signs, epidemiology & transmission

African horse sickness: clinical signs, transmission routes & prevention measures

Outline

- What is AHS?
  - Geographic range
  - The virus
  - Hosts
- The disease
  - Clinical signs
  - Gross pathology
- Transmission & spread
  - Vectors

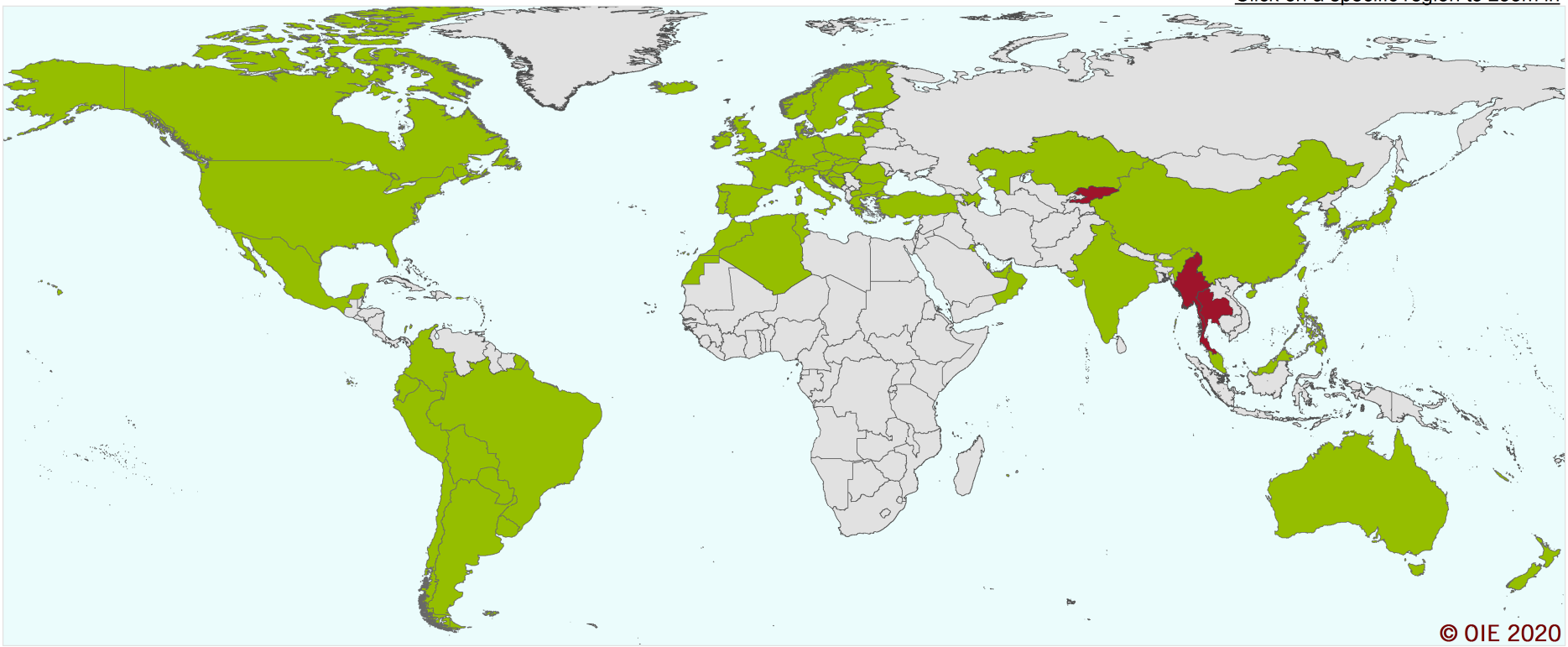
African horse sickness (AHS)

- AHS is a serious, often fatal, vector-borne disease of equids
- OIE-listed disease
  - Member countries can apply for officially free status
- Endemic disease in central/southern Africa and occasionally spreads into North Africa
- Have been occasional outbreaks elsewhere
  - Middle East, Spain, Portugal, Yemen, Cape Verde

OIE Members' official AHS status map

Last update March 2020

Click on a specific region to zoom in



Members recognised as free from AHS

Suspension of AHS free status

Countries without an OIE official status for AHS

The virus

- An orbivirus, closely related to bluetongue virus
- 9 serotypes of virus occur in Africa
- Seasonal occurrence in southern Africa associated with vector activity

Hosts (equids)

- Horses: severe disease and high case-fatality rate (>70%)
  - 5-7 day incubation, 4-8 day viraemia
- Donkeys: usually mild or sub-clinical infection, low case-fatality rate (<10%)
  - Viraemia up to 17 days
- Zebras: sub-clinical infection
  - Thought to be reservoir host in Africa
  - Viraemia up to 40 days

- Dogs?
  - Acute fatal infection
  - Only after eating infected horse meat
  - Dead-end host – do not have a role in transmission

Clinical signs

- Incubation period usually 5-7 days but occasionally up to 2 weeks
- Typical clinical signs:
  - Fever
  - Anorexia
  - Respiratory distress
  - Oedema
  - Hemorrhages
  - Sudden death

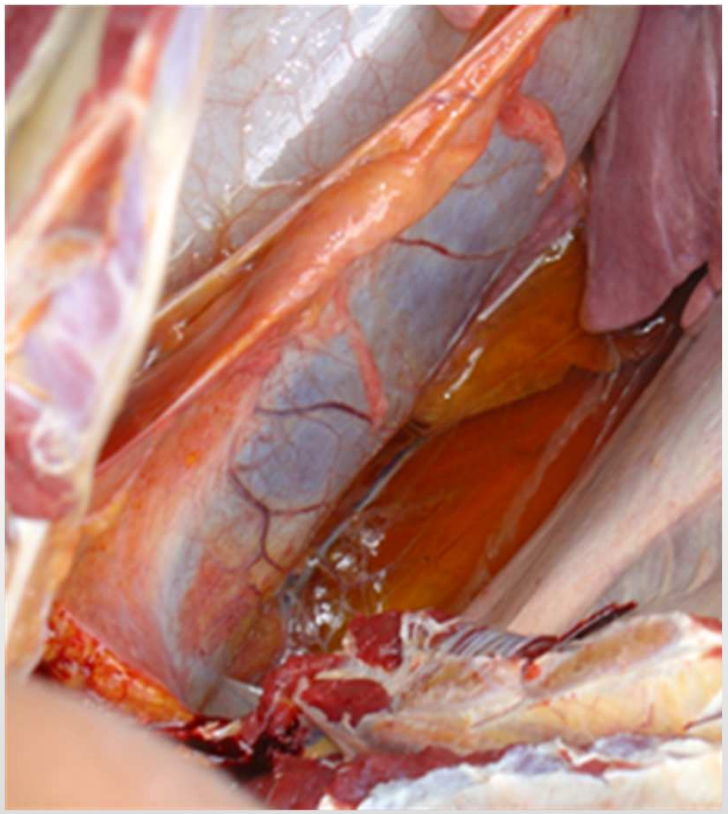
4 main forms of disease

1. Sub-clinical “horse sickness fever”
   - Mild febrile episode
   - Cases usually recover
2. Sub-acute/cardiac form
   - Fever, swelling of face, neck chest, brisket and shoulders
   - Mortality rate usually >50% within 1 week

3. Acute respiratory (pulmonary) form:
   - Fever, difficulty breathing, dilated nostrils, frothy discharge, reddened conjunctivae
   - Mortality >95%, usually die within 1 week
4. Mixed (cardiac and pulmonary form):
   - Milder pulmonary and cardiac signs
   - Mortality >70%

Pathology

- Pathology depends on form of disease
  - Respiratory form:
    - Oedema of lungs and lymph nodes
    - Pericardial and pleural effusions
    - Petechial haemorrhages in pericardium
  - Cardiac form:
    - subcutaneous and intramuscular oedema
    - epicardial and endocardial ecchymoses; myocarditis
    - hemorrhagic gastritis



Transmission

- Vector-borne disease spread by biting midges
  - *Culicoides spp*. are the primary vector
  - Biological vector with cycle in the vector
  - Mainly *C. imicola* and *C. bolitinos* in Africa
  - Other *Culicoides spp*. may be able to transmit infection but little known outside Africa
  - Occasionally transmitted by other biting insects (mosquitoes, ticks, biting flies)

Long-distance spread

- Long distance spread requires movement of live hosts or vectors
  - Live infected equids (horses, donkeys, zebras)
    - International movement and spread between regions
  - Wind-borne spread via infected vectors possible up to 700 km over water or 150 km over land

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