

VIRUS DISEASES EXOTIC TO THE EU with emphasis on Rift Valley Fever

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Introduction

- Issues related to insect / tick borne virus diseases
- Occur in E Mediterranean Tropical & Sub-Tropical Africa & Egypt
- Consider the insect borne virus diseases
- Epizootics have occurred in Egypt/E Med
- Global warming ?
- Extension possible / vectors may be present

Viruses presenting a Risk to the EU

- African viruses exotic to the EU
- Insect transmitted
- History of epizootics in Egypt
- Israel & further N into the E Mediterranean.

What Viruses

- Bluetongue/African Horse sickness
- Rift Valley fever (EFSA rpt)
- Ephemeral fever
- Lumpy skin disease
- Akabane

Bluetongue

- 95% cryptic in enzootic situations in Africa
- Culicoides transmitted
- Genotypic resistance to BTV in indigenous African breeds
- Introduced sheep genotypes susceptible
- BTV now over-winters in Europe

Bluetongue

- Present BTV strain in Europe is 8
- Cc 24 additional strains exist
- Immunologically distinct
- Some overlapping relationships
- No group specific immunogens for vaccines
- Type specific only

Bluetongue

- Most European sheep susceptible
- Risk presented by additional genotypes
- Surveillance is necessary E Med & N Africa
- Contingency plans for incursion of additional genotypes ?

African Horse Sickness

- Present in Spain
- Nine immunologically distinct strains
- Potential for extension
- Persian Gulf, Cyprus, Iraq, Iran
- North Africa to Iberian peninsula
- Surveillance necessary for Risk assessment

Rift Valley Fever

- Periodic epizootics in Africa / Egypt
- Flooding alluvial plains associated with emergence huge mosquito populations.
- RSSD (remote sensing satellite data) allows prediction of these epizootic periods
- Important zoonosis

Natural History RVFV

- Periodic epizootics
- Long inter-epizootic periods
- Trans-ovarian transmission in flood water in *Aedes* spp
- Virus activity signalled by human cases
- Abortions, EPND, etc. in domestic livestock noted later!

Current RVF Situation

- Impact of Global Warming
- More frequent & severe RVF epizootics
- Extension from historic enzootic areas is now possible
- Receptive areas are riverine alluvium / delta zones
- Liable to seasonal flooding
- E Med & S Europe esp. Italy & Greece

SPREAD of RVFV

- Multi focal & simultaneous cases
 - ◆ Egypt, Arabia (RSA/Yemen)
 - ◆ E Africa 2006 “ into Tanzania”
- No evidence for other than local spread
- Suggest emergence from cryptic foci
- Prior serological evidence for this

RVF-Conclusions

- Epizootic periods in Egypt
- Present a Higher Risk to EU
- Monitor climatic changes
- N to NE Low level air currents
- Surveillance in Cyprus /
S European countries

LUMPY SKIN DISEASE

- Insect transmitted Capripox virus
- Economically significant
- Periodic epidemics in Egypt
- E Mediterranean region (& beyond)
- Infected vector / animal movement to EU = a possibility.
- Suggest clinical surveillance in EU

Lumpy Skin Disease

- Full skin thickness lesions
- Skin lesions become necrotic
- Lymphadenopathy
- Lesions in viscera, upper respiratory tract & uro-genital tract, infertility
- Mortality cc 10%
- Serious permanent damage to hides

Lumpy Skin Disease

- Vaccination is possible
- Modified LSD strain
- Some reactions, but immunogenic
- Modified live KSGPV strain used in countries where LSD is endemic
- Acceptability of existing vaccines for use in Europe ? NO

EPHEMERAL FEVER

- Africa, Asia & E Mediterranean
- Egypt, Pakistan, Iran, Iraq
- Potential for extension to Turkey
- EU Surveillance necessary
 - ◆ Seasonal sentinel herd studies
 - ◆ Clinical surveillance when active in Egypt & E Mediterranean (Syria).

Ephemeral fever

- Rhabdovirus
- Mosquito vectors / ? Culicoides
- Lameness, stiffness, pyrexia
- Sudden onset recumbency / paresis
- Depression / drop in milk yield
- Pulmonary / subcutaneous emphysema

Ephemeral fever

- Nasal & ocular discharges
- Inappetance, dull
- Sternal recumbency 2-5 days
- Sudden & complete recovery
- Mortality is low, cc 3%

Ephemeral fever

- Extension from E Mediterranean
- Significant economic losses due to fall in milk yield / debility
- Milk yield deficit persists
- Live vaccines with adjuvants in use
- A seasonal disease problem

Akabane

- Akabane detected in Cyprus
- Cattle sheep & goats affected
- No clinical signs adults
- Abortions, stillbirths, foetal abnormalities, etc
- Mosquito, Culicoides vectors
- Bunyavirus - Simbu group

Other Viruses

- African Swine Fever
- Peste des Petits Ruminants
- Tick borne viruses
- Nairobi Sheep Disease, Crimean Congo haemorrhagic Fever, etc.
- Palyam group viruses -
 - ★ ? foetopathic

BUSHMEAT

- What is it ?
- Who brings it ?
- Why is it a problem?
- Specific disease risks
- Current legislation

Potential Hazards

- Dried / fresh meat
- In Luggage - hold/hand
- Ruminant meat
 - ◆ FMD / ASF
 - ◆ Other viruses
- Primate meat
 - ◆ Ebola
 - ◆ Others

EU Safeguards

Review airline regulations

Total Ban on “bush” meat carriage

Positive enforcement measures

Inspections, esp. use of dogs

Define responsibilities of carrier/EU
country