The epidemiology and socio-economic impact of Rift Valley fever epidemics in Tanzania: a review

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Published articles

• Inclusion criteria were limited

Results

Through extensive literature review

Methodology

• Information presented in here was obtained
• Inclusion criteria were limited

Background

Rift Valley fever (RVF), is an acute, mosquito-borne zoonotic viral disease caused by RVF virus (RVFV).

It mainly affects sheep, cattle, goats, buffalo, camels and humans

RVF was first reported in Kenya in 1912

It subsequently affected other countries in East Africa including Tanzania

Objective

This review was conducted in order to provide update on RVF in Tanzania on:

• trend of occurrence
• epidemiological factors
• socio-economic impacts

Literature review 1930 to 2011

• Journal articles
• Online books chapters
• Conference papers
• PhD and MSc theses
• Grey literature

Trend of RVF epidemics in the country

RVF is a notifiable disease in Tanzania

It is not known how the virus was introduced and how it is maintained in the country

Tanzania had encountered a total of six epidemics i.e. 1930, 1947, 1957, 1977/1978, 1997/1998 and 2006/2007 (Figure 1)

Past epidemics had concentrated in the Northern zone (Figure 1)

Recent review of mostly internet and online literature

82

• Initial searching of published articles (internet and manual searching)

38

• Initial review

17

• Included into the study
  • 1 described socio-economic impact

Publications and reports meeting the inclusion criteria were limited

20

• Ministry of Health & Social Welfare
• Ministry of Livestock and Fisheries Development
• National Institute for Medical Research
• Central Veterinary Laboratory
• Veterinary Investigation Centres

• Included into the study

Inclusion criteria

• Studies and reports on RVF in Tanzania describing
  • Trend
  • Epidemiology
  • Socioeconomic impact

Proportion of animals affected in 2006/2007

RVF affected 46,680 cattle, 56,990 goats, and 32,900 sheep

A total of 15,726 cow, 19,199 does and 11,085 ewes aborted

Approximately case fatality rate of 37% was observed in cattle, goats and sheep

Highest case fatality rate in humans in 2006/2007

Males (61.8%, n=309), were mostly affected within 21-50 years of age group

309 human cases with 142 deaths (46% case fatality rate) were recorded in 2006/2007

Risk factors associated with RVF occurrence of epidemics and spread in the country

Heavy rains 2 to 3 fold higher than usual that resulted in the worst flooding (Figure 2) that supports mosquito breeding and survival

Increased mosquito density and livestock populations (17.7 million cattle, 12.5 million goats and 3.5 million sheep)

Contact with animal products and body fluids from infected animals

Animal movements and food consumption habits

Major socioeconomic impact due to the latest epidemic in 2006/2007

Food insecurity and threatened livelihood

Animals lost monetary value by 34% (e.g. price of a bull dropped from USD 238 to 158)

Monthly internal market flow dropped by 37% (e.g. 4,251 to 2,679 cattle)

Annual external market flow dropped by 54% (e.g. 2,594 to 1,183 cattle)

Loss due to death of domestic ruminants > USD 6m

Government spent about USD 4 millions in the control of the disease

Patients were hospitalized (5 days in average)

Patients remained ill for > 28 days (range of 2 to 120 days) before death or discharge

Control measures that had been implemented during epidemics in the country

Training of medical personnel (patient care and diagnosis)

Training of Journalists and other media staff to increase public awareness about the disease

Awareness creation for farmers and the general public

Ban of the slaughter of domestic ruminants

Imposition of quarantine in affected and suspected areas

Use of insecticides impregnated bed nets to reduce human contact to mosquito

Vaccination of domestic animals

Lessons learned from previous epidemics

Each subsequent outbreak had expanded to cover wider areas of the country

The disease had dramatic socioeconomic impacts both at community and nation at large

Latest outbreak had the largest case fatality rate in humans than other countries that concurrently faced RVF epidemics

Inter-sectoral collaboration between animal and human health sectors is crucial in controlling RVF

Contacts

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