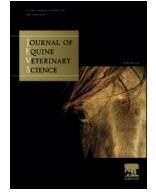




ELSEVIER

Contents lists available at ScienceDirect

## Journal of Equine Veterinary Science

journal homepage: [www.j-evs.com](http://www.j-evs.com)

## Case Report

# Clinical Presentation, Progression, and Management of Five Cases of Ross River Virus Infection in Performance Horses Located in Southeast Queensland: A Longitudinal Case Series

Anita Jane Barton <sup>a,\*</sup>, Helle Bielefeldt-Ohmann <sup>a,b</sup><sup>a</sup> School of Veterinary Science, The University of Queensland, Gatton, Queensland, Australia<sup>b</sup> Australian Infectious Diseases Research Centre, University of Queensland, St. Lucia, Queensland, Australia

## ARTICLE INFO

## Article history:

Received 18 August 2016

Received in revised form 21 December 2016

Accepted 23 December 2016

Available online 6 January 2017

## Keywords:

Ross River virus

Horse

Arbovirus

Arthritis

Febrile illness

Lethargy

## ABSTRACT

Ross River virus (RRV), a mosquito-transmitted alphavirus prevalent in Australia, is believed to cause poor performance, lethargy, and muscle stiffness in Australian horses. However, disease progression and management is poorly documented. A better understanding of disease presentation, acute therapy, and long-term management is required. The aim of the study was to describe clinical presentation, diagnosis, acute treatment, and long-term management of RRV infection in horses. This study is a series of retrospective case reports. Clinical and diagnostic data were obtained from both veterinary records, and owner interviews for five performance horses that presented with acute poor performance coupled with serologic evidence of RRV exposure. Clinical and owner reports were evaluated from the time of presentation until the horses appeared asymptomatic and had returned to normal performance. Ross River virus was suspected to be the cause of generalized muscle stiffness and poor performance in five performance horses located in southeast Queensland between 2011 and 2015. Clinical symptoms included pyrexia, tachypnea, exercise intolerance, generalized muscle stiffness, synovial effusion, and edema of the lower limbs. Serologic investigations (ELISA and/or virus neutralization assay) detected antibody responses to RRV. Horses were treated with nonsteroidal anti-inflammatory drugs ( $n = 5$ ) and disease-modifying osteoarthritis drugs ( $n = 2$ ). Most horses returned to previous athletic capabilities between 7 and 12 months after the onset of symptoms. Not all horses in the study had preclinical serology or submitted paired blood samples for serology, meaning assumption of acute infection in those horses was made based on clinical signs coupled with positive serology. Ross River virus is a significant but poorly understood cause of poor performance in Australian horses. This report is the only one to document longitudinal management of performance horses affected by RRV infection. Much more research is needed to gain a better understanding of this infection in horses.

© 2017 Elsevier Inc. All rights reserved.

A.J.B collected retrospective clinic data and prepared the manuscript. H. B.O analyzed serologic samples and edited the manuscript.

\* Corresponding author at: Anita Jane Barton, University of Queensland Gatton Campus, Building 8114, Gatton 4343, Australia.

E-mail address: [a.scampton@uq.edu.au](mailto:a.scampton@uq.edu.au) (A.J. Barton).

## 1. Introduction

Ross River virus (RRV) is an arthropod-borne alphavirus in the family *Togaviridae* found in Australia and Papua New Guinea and is suspected to occur epidemically in the Solomon Islands [1,2]. The primary vertebrate reservoir

host for RRV may vary regionally and seasonally but includes possums, macropods, such as kangaroos and wallabies, and humans (see Fig. 1) [3–5]. Although birds commonly feature as reservoir hosts for many other arboviruses, RRV antibody prevalence in birds is generally low, and avian species are generally not considered important in transmission of RRV [4]. The major arthropod vector for RRV is believed to be *Aedes vigilax* in coastal regions of northern and eastern Australia, *Aedes camptorhynchus* in southern and southwestern Australia, and *Culex annulirostris* in tropical and temperate inland areas, although the virus has been isolated from over 30 different species of mosquito Australia wide [6]. Even though serologic surveys have detected RRV-specific antibodies in a range of wild and domestic species, such as marsupials, livestock, and domestic pets, it is unknown if animals other than marsupials play a role in amplification and transmission of the virus or if RRV is capable of causing symptomatic disease in animal species other than horses and humans [2,7,8]. Speculation exists about whether horses function as a reservoir host for RRV and if they play a role in disease transmission to humans. It appears that in most cases, viraemia is transient in horses and humans, and they are generally unable to amplify the virus sufficiently to extend transmission to mosquitoes. Nevertheless, some evidence exists that in unique circumstances, human viraemia may be high enough to perpetuate the transmission cycle, and it

is possible this could occur in horses also [3,4,9,10]. A recent documented case of transfusion–transmission of RRV has also proven that, in exceptional circumstances, human-to-human transmission of the virus is possible [11].

Ross River virus is responsible for debilitating illness in both humans and horses characterized by severe arthralgia, myalgia, fever, and fatigue and known as “epidemic polyarthritis” or Ross River fever. Clinical disease in humans presents as severe joint pain and lethargy, in some cases preceded by a transient fever (~30% of cases), and may be accompanied by a transient rash [2,12]. Arthritis and arthralgia typically affect the knees, ankles, wrists, and small joints in the fingers. Fatigue and arthralgia in humans have been reported to persist for as long as 6 to 12 months [12–14]. Relapses of clinical signs following periods of illness or stress have been suspected but not definitively documented.

Very few studies document the effects of RRV infection in horses [15,16], despite it being suspected of causing poor performance and musculoskeletal disease in the Australian equine population for more than 25 years [17,18]. Reports to date suggest horses experience a transient fever and often present acutely with nonspecific viral vasculitis of hind or fore limbs resulting in “filling” or edema of the limb between the fetlock and carpus or hock. Swelling of joints, ataxia, submandibular lymphadenopathy, oral petechiae, and high serum fibrinogen and globulin levels have also been reported [15,16].

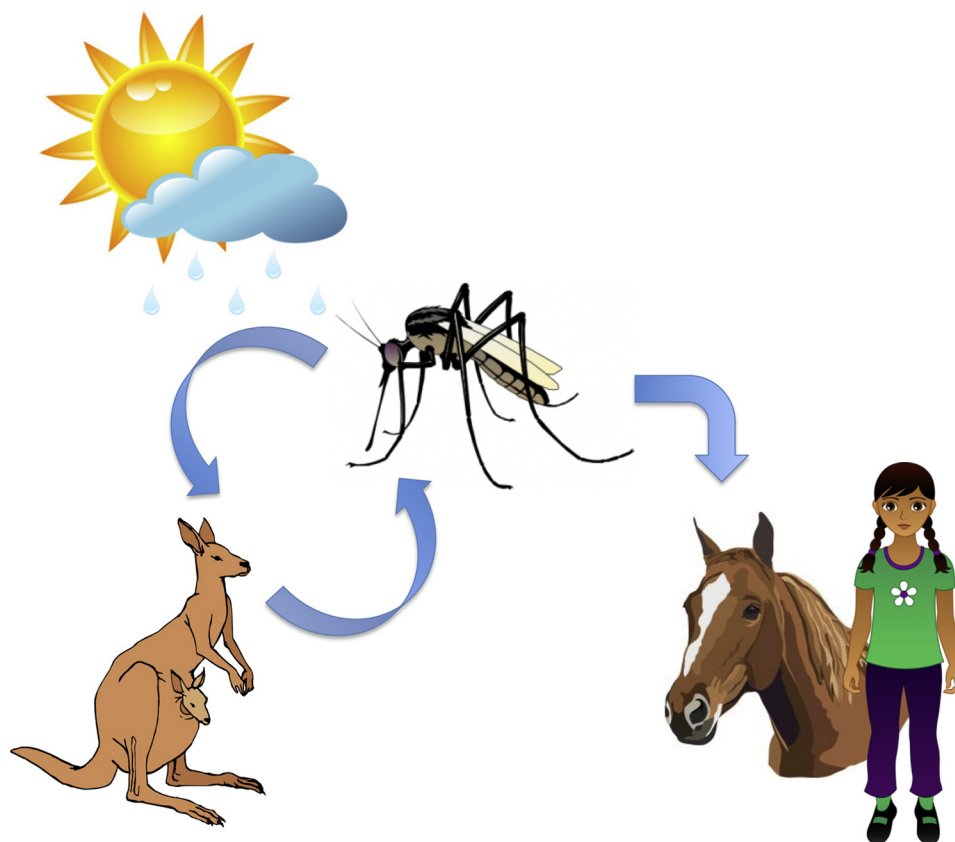


Fig. 1. Environmental factors increasing host and vector numbers increase the likelihood of naïve humans and horses, which will contact an infected mosquito.

Download English Version:

<https://daneshyari.com/en/article/5535439>

Download Persian Version:

<https://daneshyari.com/article/5535439>

[Daneshyari.com](https://daneshyari.com)