



## Participatory appraisal of the impact of epizootic lymphangitis in Ethiopia



C.E. Scantlebury<sup>a,\*</sup>, A. Zerfu<sup>b,1</sup>, G.P. Pinchbeck<sup>a</sup>, K. Reed<sup>c,2</sup>, F. Gebreab<sup>c</sup>,  
N. Aklilu<sup>c</sup>, K. Mideksa<sup>c</sup>, R. Christley<sup>a</sup>

<sup>a</sup> Department of Epidemiology and Population Health, Institute of Infection and Global Health, School of Veterinary Science, Leahurst Campus, University of Liverpool, Neston, Wirral CH64 7TE, UK

<sup>b</sup> SPANA Ethiopia, College of Veterinary Medicine and Agriculture, University of Addis Ababa, Debre Zeit Campus, Ethiopia

<sup>c</sup> SPANA UK, John Street, London, UK<sup>3</sup>

### ARTICLE INFO

#### Article history:

Received 22 July 2014

Received in revised form 11 March 2015

Accepted 12 March 2015

#### Keywords:

Epizootic lymphangitis

Working equids

Participatory research

Qualitative analysis

Disease prevention

Resource-poor settings

### ABSTRACT

Epizootic lymphangitis (EZL) is reported to have a significant impact upon livelihoods within resource-poor settings. This study used a participatory approach to explore peoples' experiences of EZL and examine the perceived impact of disease, owner knowledge and understanding of EZL, lay management of disease and, attitudes and strategies towards disease prevention.

Focus-group discussions were held with 358 cart-horse owners and drivers recruited from 7 towns attended by SPANA (Society for the protection of animals abroad) mobile veterinary clinics and 2 unexposed towns where no SPANA clinics were available. Focus group discussions explored four main research questions: (1) Is EZL recognised by animal owners, and is this considered an important disease in equids? (2) What factors do animal owners associate with the development of disease? (3) What happens to an animal with clinical disease and how does this impact upon the owner/community? (4) Are measures taken to reduce disease occurrence? These key areas were explored using photographs, disease ranking, matrices and open discussion. Data were analysed using descriptive statistics and thematic analysis.

The results are presented thematically and include: recognition and descriptions of EZL, treatment strategies used, disease priorities and ranking, impact of disease, disease transmission and attitudes and approaches to disease prevention.

EZL was widely recognised and ranked highly as an important disease of equids. However, there was uncertainty around identifying early cases of EZL, and this could impact upon the timing of initiating treatment and separating potentially infectious animals. People had varying knowledge of effective methods for disease prevention and reported particular difficulties with isolating infected animals.

The impact of EZL was multi-dimensional and encompassed effects upon the horse, the individual owner and the wider society. Working equids provide a vital utility and source of income to many people in resource-poor settings. Often, infection with EZL resulted in a reduction in working ability which had a direct impact upon the livelihoods of owners and their dependent family members. EZL also impacted upon the welfare of the horse as sick animals continued to be worked and, in advanced cases, horses were abandoned due to ineffective or unavailable treatment.

This study conceptualises the importance of EZL due to the effects of the disease on the horse and its impact upon human livelihoods. Epizootic lymphangitis is a neglected disease that requires further investigation in order to develop practical and sustainable disease control strategies within endemic regions.

© 2015 Elsevier B.V. All rights reserved.

\* Corresponding author. Tel.: +44 0151 795 6011; fax: +44 151 794 6005.

E-mail addresses: [claire.scantlebury@liverpool.ac.uk](mailto:claire.scantlebury@liverpool.ac.uk) (C.E. Scantlebury), [abebaw.zerfu@yahoo.com](mailto:abebaw.zerfu@yahoo.com) (A. Zerfu), [ginap@liv.ac.uk](mailto:ginap@liv.ac.uk) (G.P. Pinchbeck), [Karen@thebrooke.org](mailto:Karen@thebrooke.org) (K. Reed), [nigatakat@yahoo.com](mailto:nigatakat@yahoo.com) (N. Aklilu), [robc@liv.ac.uk](mailto:robc@liv.ac.uk) (R. Christley).

<sup>1</sup> Present address: Ethiopian Development Research Institute (EDRI), Addis Ababa, Ethiopia.

<sup>2</sup> Current address: The Brooke, UK.

<sup>3</sup> Tel.: +44 020 7831 3999.

## 1. Introduction

Epizootic lymphangitis (EZL) is often considered an historic equine disease, following slaughter and eradication programmes in a number of European countries (Pallin, 1904; Refai and Loot, 1970). Previous reports located the disease within European, African and Asian countries including: Iraq (Al-Ani et al., 1998); Egypt (Refai and Loot, 1970; Gabal et al., 1983; Selim et al., 1985); Sudan (Bennett, 1931; Awad, 1960; Hamid and Yousif, 2001); Central African Republic (Hervé et al., 1994); Nigeria (Addo, 1980); Italy (Plunkett, 1949); Russia (Noskoav, 1960); UK and Ireland (Pallin, 1904); Japan (Tokishiga, 1896); China (Zhang et al., 1986) and India (Singh, 1965). Little is known of the current spatial distribution of disease as surveillance and reporting is limited. OIE disease distribution maps suggest that EZL is restricted to Ethiopia, Senegal and South Africa (OIE WAHID maps, 2005); however, current clinical cases are also evident in Chad and the Gambia (personal communication and authors' own experiences). Therefore, EZL continues to be a major problem in socio-economically deprived areas of Africa, such as Ethiopia, where the disease has been reported to affect around one in four equids in some regions (Ameni and Siyoum, 2002; Ameni and Terefe, 2004; Asfaw et al., 2012).

Epizootic lymphangitis is caused by the dimorphic fungal pathogen *Histoplasma capsulatum* var. *farciminosum* (HCF) and is characterised by multi-focal pyo-granulomatous sub-cutaneous nodules that disseminate via the lymphatic system. The clinical presentation varies and has been described as occurring in four forms; ocular, cutaneous, respiratory, and asymptomatic carriers (Al-Ani, 1999). Mixed clinical presentations can occur and may reflect different stages of disease progression. Chronic disease results in progressive lameness and severe debilitation which may be a result of multi-systemic involvement (Singh et al., 1965). The respiratory form is characterised by pyo-granulomatous lesions within the nasal mucosa that can extend throughout the respiratory tract to the lung parenchyma (Singh et al., 1965; Fawi, 1971; Al-Ani, 1999). Few studies have examined the equine immune response to *Histoplasma* and the extent and duration of immunity to natural infection, the presence of asymptomatic carriers and response to experimental vaccination are yet to be fully ascertained (Noskoav, 1960; Gabal and Khalifa, 1983; Soliman et al., 1984; Gabal and Mohammed, 1985; Soliman et al., 1985; Zhang et al., 1986; Ameni et al., 2006).

Little evidence is available to describe risk factors for EZL, such as factors favouring persistence of the organism within the environment (Gabel and Hennager, 1982), the routes of transmission (Singh, 1965, 1966) and potential vectors (Singh, 1965). Previous cross-sectional studies have reported an association with altitude and average annual temperature (Ameni, 2006) and both ticks and flies have been implicated as mechanical vectors (e.g. *Musca* and *Stomoxys* species, Singh, 1965, *Amblyoma* and *Boophilus* ticks, Ameni and Terefe, 2004) although evidence for this is weak. While these studies provide a valuable basis for understanding the biology of HCF, there remain many unanswered questions of the disease ecology, epidemiology and pathogenesis. Recommendations for control are largely based upon slaughter of infected animals (OIE [http://www.oie.int/fileadmin/Home/eng/Health\\_standards/tahm/2.05.04.EPIZ\\_LYMPHANGITIS.pdf](http://www.oie.int/fileadmin/Home/eng/Health_standards/tahm/2.05.04.EPIZ_LYMPHANGITIS.pdf)). However, most currently known endemic regions are resource-poor and mass slaughter is not a practicable option mainly due to the reliance upon equids to support livelihoods, lack of funds to compensate owners and little infrastructure to implement such campaigns. Therefore, research is needed to examine the drivers promoting maintenance of endemicity within these regions and to develop infection control strategies.

Epizootic lymphangitis is reported to have a significant impact upon livelihoods within resource poor settings (Jones, 2006; Aklilu

and Zerfu, 2010). In a study investigating the economics of the cart-horse industry in Ethiopia, Aklilu and Zerfu (2010) reported that losses to the owner due to morbidity of a horse with EZL resulted in more than a 50% reduction in daily earnings. In Ethiopia, where EZL is endemic and human–animal interdependency is integral to livelihoods (Admassu and Shiferaw, 2011), consultation with horse owners could provide insights into the way the disease is managed.

This study used a mixed methods approach incorporating participatory research and qualitative inquiry. This combination of methods was adopted as they are a readily adaptable and inclusive methodology to gauge the knowledge, opinions and experiences of large groups of people whilst alleviating the need for questionnaire based studies and thereby do not exclude those with low-levels of literacy or numeracy. The study aimed to describe experiences of EZL among horse owners in Ethiopia and examine the impact, owner knowledge and understanding of EZL, lay management of disease and attitudes towards and strategies for disease prevention.

## 2. Materials and methods

### 2.1. Focus group discussions

Focus groups were conducted to address four main research questions: (1) to what extent is EZL recognised by animal owners and do people consider it to be an important disease in their equids? This was explored quantitatively with a participatory ranking exercise and qualitatively through discussions. (2) What factors do animal owner's associate with the development of EZL? This included a qualitative inquiry of the owner's recognition of clinical signs and disease progression. (3) What happens to an animal with clinical disease and how does this impact upon the owner/community? The effect of the disease on the working ability of the animal was assessed semi-quantitatively using pair-wise matrices alongside group discussion. (4) Are measures taken to attempt to reduce disease occurrence? This included an exploration of knowledge and attitudes towards disease prevention.

The focus group discussions were with cart-horse owners and drivers recruited from those attending SPANA (<https://spana.org/>) mobile veterinary clinics. (SPANA is a UK based charitable non-governmental organisation (NGO) working in low-income countries around the world providing free veterinary treatment, community development and training). Participants were selected from 7 SPANA clinic sites and 2 towns with no previous access to SPANA clinics (classed as unexposed towns, see Fig. 1). All towns were purposefully selected based upon logistical accessibility and were situated within the North, East and West Shewa and Arsi regions of Ethiopia. The nine towns varied topographically and included highland, mid-highland and lowland regions. The discussions were conducted in Amharic or Afan Oromo (dependent upon the preferences of the participants) and facilitated by the first author and an Ethiopian animal health professional (either AZ or KM) who acted as co-facilitator and translator. All facilitators were trained in the participatory exercises used and were careful not to introduce ideas to the group by only using open and non-leading questions to facilitate discussion.

Due to the broad aims of the study, four separate formats were used for the focus group discussions (A–D, Table 1), designed to explore the four main research questions. All four focus group formats were used at each of the nine study sites. The focus group formats were rotated within each visit in order that people waiting to receive treatments would not discuss the content with the previous group. At the end of the focus group sessions, participants were given an educational talk about EZL that described methods

Download English Version:

<https://daneshyari.com/en/article/2452370>

Download Persian Version:

<https://daneshyari.com/article/2452370>

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