

consequences when animals are treated based on clinical signs; piroplasmiasis and trypanosomiasis have different treatments, both with potentially severe side effects. There are also important implications for prevention strategies: trypanosomiasis and JE are transmitted by flying insects that breed in stagnant water; piroplasmiasis is transmitted by ticks; EHV-1 is directly transmitted between infected animals. This complex mix of epidemiological profiles should be fully appreciated by veterinarians working within these communities. There is a great need to understand and mitigate these diseases. High rates of equine loss result in huge economic cost for Qalander communities who are marginalised and poor. Additionally, their migratory nature poses an infection risk to other animals in the country. This study highlights the importance of definitive diagnosis in these populations. However as serological tests are not commonly available in these regions there is a requirement to develop cheap, available and accurate diagnostic tests.

134 Persistence of equine piroplasmiasis in horses in Nigeria

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The continuing prevalence of Equine Piroplasmiasis (EP) in Nigeria has important implications in the health and welfare of horses. The non-specific clinical signs commonly seen in horses in Nigeria including weight loss, lack of appetite and poor performance have raised questions of the possible causes of these signs. A total of 572 horses showing non-specific signs were examined between September 2007 to June 2014 from four widely separated states of Nigeria in order to determine the prevalence of piroplasmiasis among polo and pleasure horses, and the clinical significance of the non-specific signs commonly observed in EP. The breeds of horses sampled include West African dongola, Arabian, Sudan country-bred and Argentine polo ponies. A detail history was taken and a thorough physical examination was performed. A direct examination of (n-156) the stained blood smears in 2007 to 2010 was carried out while c-ELISA (VMRD) was used to assay samples studied between 2011 to 2014. *Theileria equi* and *Babesia*



Figure 2. Ocular discharge.

caballi were demonstrated in examined stained blood smears while the sera assayed with c-ELISA were also positive for both *Theileria equi* and *Babesia caballi*. Tick infestation (Fig 3) was seen in some cases. All the horses had a history of extensive travelling within the year of study. Out of the 156 blood samples tested between 2007-2010, 16(10.3%) were positive for *Theileria equi*, while 4(2.7%) were positive for *Babesia caballi*. This demonstrated that a total of 20(12.8%) out of 156 were positive. In 2011, 252 samples analyzed using c-ELISA where 196 (77.8%) were positive for *T. equi*, while 12(4.8%) were positive for *B. caballi*. A total of 90 sera were assayed in 2013, with 54(60%) positive for *T. equi* while 3(3.3%) were positive for *B. caballi*. In 2014, 74 samples were assayed(c-ELISA) with a prevalence of 31.3% (23) for *T. equi* and there was no analysis was carried out to ascertain the prevalence of *B. caballi*. The presence of a bilateral purulent ocular discharge (Fig 2) was common among all the horses at the onset of EP infection and relaxation of the anal sphincter (Fig 1) was common among the Argentine polo ponies especially in acute and sub-acute forms of EP. The wide distribution of EP could be related to the presence of the vectors. Also, there is a clear indication that the non-specific signs have a positive clinical significance with EP. Finally, some of the horses that were negative for piroplasmiasis could actually be positive considering the fact that “carrier

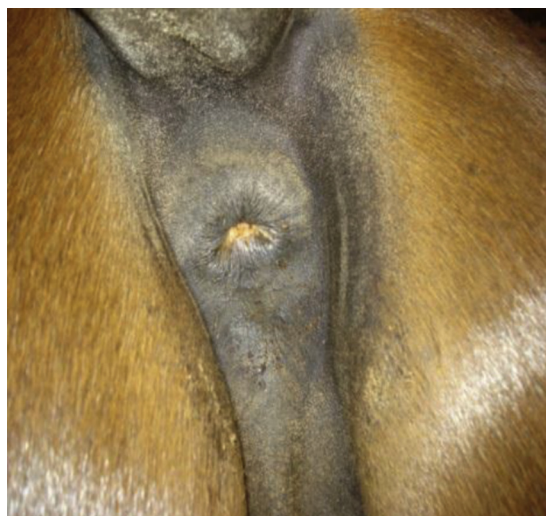


Figure 1. Relaxation of the anal sphincter.



Figure 3. Tick infestation at the base of the tail.

horses” and in most cases of *Babesia caballi*, parasitemia is very low and determination on stained blood smears is usually a difficult task.

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Atypical cases of equine Glanders could form a risk for re-emerging Glanders disease worldwide

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Glanders disease (GD) is a notifiable contagious zoonotic disease caused by *Burkholderia mallei*, a host-adapted intracellular bacterium mainly affecting equids in endemic areas (Africa, Middle East and South America). Human infections may be fatal. In horses, typical clinical signs are well described; the cutaneous form, the (acute) nasal form, and the pulmonary form. Recently, reports of GD cases in Germany highlighted the fact that this disease can re-emerge in different parts of the world. Transmission occurs directly or indirectly through contact with skin exudates and respiratory secretions. Secretions may contain large numbers of organisms that may contaminate shared water and feeding places. Carrier horses are an important reservoir of GD and can periodically shed bacteria from the respiratory tract and, if not identified as infected, may prove important in the transmission of the disease. Hence, GD can be introduced into a country or region where this disease has been extinct for decades. The aim of this study is to describe cases of atypical GD, to create awareness of GD disease and to minimize the risk of (re)-introduction of GD into susceptible horse populations. In 2009, several outbreaks of GD had been identified in Kuwait (horse population estimated 4200 horses). During this time, 22 horses were admitted to two Equine hospitals for general clinical exam and, while not showing typical signs of GD, samples were routinely collected and tested positive for GD. Serological testing was performed by CFT according to OIE requirements (sensitivity 97%, specificity 90%) and 19 cases were confirmed positive by cELISA (sensitivity 100%). The main clinical signs of the 22 positive cases included mild fever (3), mild nasal discharge (6), swollen distal limb (2), skin ulceration (2), or testing for export purposes (8). All cases except 5 cases, may be classified as carriers. For the purpose of this study, case details of 5 cases are discussed: (1), a mild chronic cough (since importation) admitted for endoscopy; (2), reduced appetite, for gastroscopy; (3), a mild swollen hind limb; (4), mild fever for 3 weeks and (5), a firm painful swelling at the mid-area of the neck and a non-specific histopathology result. Significant disease was noticed at some point in time in all 5 atypical cases. It was concluded that GD might take months to years to become recognizable, especially when antimicrobials are administered simultaneously. Other risk factors are varying virulence, low-sensitivity serologic assays caused by the large varying incubation period, low prevalence, fluctuating antibody titres and the fact that veterinarians in GD free countries are not familiar with GD. Therefore, current increased worldwide travelling of horses as well as import and temporary import of horses originating from OIE B listed countries for breeding, training and competition, may carry a potential risk of re-emerging Glanders disease into a region and secure importation rules are recommended.

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Spatial distribution of *Burkholderia mallei* in Punjab, Pakistan

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A little is known about the geo-spatial distribution of *Burkholderia mallei* in Punjab, Pakistan. *B. mallei* is a zoonotic pathogen, causes glanders in equids. A study was conducted to determine the geo-spatial distribution of *B. mallei* in soil samples collected from Punjab province of Pakistan. A total of 2,280 soil samples representing 456 villages of eight districts of the Punjab province were examined using real time PCR-based assay. It was observed that 11 (0.48%) of 2,280 samples were positive for *B. mallei* distributed in varied locations of Punjab. The samples collected from Sheikhpura district showed higher prevalence (2.37%) followed by Chakwal district (2.10%). None of the soil samples from Gujranwala, Sahiwal, DG Khan, Attock, Faisalabad and Sargodha were found positive for *B. mallei* (Fig. 1). The analysis of risk factors including distance from main road 0.4101 (0.1197 - 1.4048), distance from canal / stream 1.4652 (0.4277 - 5.0191), distance from animal markets 1.4711(0.3169 - 6.8288), human density 2.2889 (0.4933 - 10.6200) and animal interaction 0.8717 (0.2653 - 2.8643) showed no association with presence of *B. mallei* in the soil samples. The findings of the study suggest that RT-PCR assay can detect *B. mallei* in soil samples collected from Punjab province. The observations made in this study can be used to develop hypothesis for a more rigorous analytical epidemiological study to understand the role of biological reservoirs of *B. mallei* and its occurrence in soil samples.

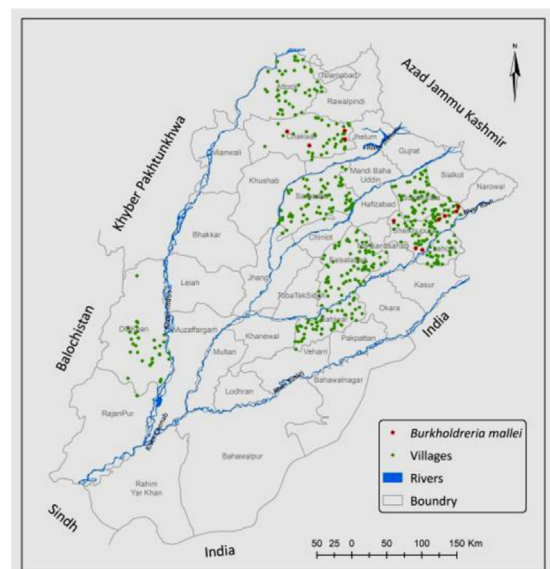


Figure 1. Geospatial distribution of *Burkholderia mallei* DNA in soil samples collected from eight districts of Punjab, Pakistan.