Elimination from elite endurance rides in nine countries in 2008 – a preliminary study

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Introduction

Endurance is the fastest growing Féderation Équestre International (FEI) discipline.

The high elimination rate from endurance rides has been a regular matter for discussion in professional and public forums.

In recent years, elimination rates seem to have increased.

Objectives

To document elimination rates and to explore potential risk factors for elimination due to lameness or metabolic reasons in 9 countries representing all 5 continents

Hypothesis

Weather conditions and terrain considerably vary between countries; therefore we hypothesised that country would have a significant effect on elimination rates for both lameness and metabolic reasons.

Materials and Methods

Data for 4326 started horses in endurance rides of ≥100 km held in 2008 in Australia, France, Italy, South Africa, Spain, United Arab Emirates (UAE), United Kingdom (UK), Uruguay and United States of America (USA) were collected from the FEI website (www.fei.org).

For each class, the country, the distance of the ride, whether the class was restricted to young riders, the number of started horses and the winning speed were recorded. Horses that retired or were eliminated for lameness, metabolic or other reasons were recorded.

Univariable and multivariable logistic regression models were used to assess the effect of country, number of horses in the class, ride distance and young rider class on two outcomes (elimination for lameness and metabolic reasons).

Table 1.
The number of horses that started and completed the ride or were retired or eliminated at Féderation Équestre International endurance rides of ≥100km in 2008 in nine countries. The percentages indicate the proportion of all started horses. N = number

Country	Started N	Completed N (%)	Retired N (%)	Eliminated N (%)			
				All	Lameness	Metabolic	Other
Australia	155	99 (63.9)	1 (0.7)	55 (33.7)	46 (29.7)	5 (3.2)	3 (1.9)
France	1029	565 (54.9)	85 (8.3)	380 (36.9)	297 (28.9)	63 (6.1)	20 (1.9)
Italy	291	148 (50.9)	21 (7.2)	122 (41.9)	81 (27.8)	22 (7.6)	19 (6.5)
UK	287	124 (43.2)	20 (7.0)	143 (49.8)	113 (39.4)	17 (5.9)	13 (4.5)
South Africa	243	140 (57.6)	17 (7.0)	86 (35.4)	61 (25.1)	16 (6.6)	9 (3.7)
Spain	408	180 (44.1)	48 (11.8)	180 (44.1)	110 (27.0)	51 (12.5)	18 (44.1)
UAE	1497	510 (34.1)	140 (9.4)	847 (56.6)	544 (36.3)	255 (17.0)	45 (3.0)
Uruguay	240	111 (46.3)	7 (2.9)	122 (50.8)	83 (34.6)	29 (12.1)	10 (4.1)
USA	176	112 (63.6)	10 (5.7)	54 (30.7)	45 (25.6)	9 (5.1)	0 (0)

Results

Data for 157 classes at 91 events were analysed. The UAE had the highest number of entries (1497), followed by France (1029) and Spain (408).

Of 4326 started horses, 46.0% finished the ride (Table 1).

Lameness was the most common cause of elimination in all countries followed by elimination for metabolic reasons (69.2% and 23.5% of all eliminations and 31.8% and 10.8% of all started horses, respectively).

Eight % of horses were retired by the rider, having passed the veterinary examination.

In multivariable analysis, the risk of *elimination for lameness*

• was associated with the country in which the ride was held; horses competing in rides held in the UK (odds ratio [OR] =2.11, P<0.001), UAE (OR=1.72, P=0.007) and Uruguay (OR=1.69, P=0.013) had the highest risk of elimination for lameness.

• the risk significantly increased (OR=1.60) for horses competing in rides with ≥80 entries.

The risk of *elimination for metabolic reasons*

• was also significantly associated with the country in which the ride was held; the highest risks of elimination for metabolic reasons were recorded in the UAE (OR=7.28, P<0.001), Spain (OR=5.61, P<0.001), Uruguay (OR=5.26, P<0.001) and Italy (OR=2.94, P=0.035).

• the risk significantly increased (OR=2.17) for horses competing in rides with ≥100 entries.

Discussion

To date, this is the largest study describing completion rates and risk factors for eliminations due to lameness and metabolic reasons from endurance rides in different countries.

The country of the ride had a significant effect on the risk of elimination due to both lameness and metabolic reasons. The number of entries in the ride was also significantly associated with the risk of elimination due to either lameness or metabolic reasons.

This may be attributable to a number of factors, including terrain, weather, training, riding (e.g. speed and fitness), and quality of veterinary control at the ride; all of which require further detailed investigation.

This study was carried out as a pilot study for a prospective large-scale, world-wide study that aims to investigate risk factors for lameness and specific orthopaedic injuries resulting in elimination from elite endurance rides. The overall aim is to improve the welfare of endurance horses, and to help to base the FEI ride regulations on evidence-based data.

Conclusions

• Elimination rates varied between countries, with lameness being the most common reason for elimination globally.
• The country and the number of started horses were risk factors for elimination due to lameness and for elimination due to metabolic disorders.
• A prospective study is needed to assess the effects of environmental conditions, individual horse speed and other variables on the risk of specific causes of elimination.