

Working equids presented at a veterinary reference center in southern Chile (2015-2021)

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ABSTRACT. In Chile many families still rely on working equids as a fundamental source of income. Their use is particularly important for harnessing and transport of people and goods, in agriculture as well as in the leisure industry. Information on common emergency and clinical conditions in working equids is important to identify foci for owner education and to guide action towards disease prevention and animal welfare. The aim of the report was to highlight details about the clinical presentation of working equids at a veterinary reference center in southern Chile.

Hospital records from working equids presented *pro bono* from 2015 to 2021 at the Equine Clinic of the Veterinary Teaching Hospital of the Universidad Austral de Chile were evaluated and included.

A total of 107 working equid cases were recorded. The age range went from 1 day of age to 19 years (8.2±5.19 years). Most cases were not hospitalized and discharged on the same day of presentation (n=52). Horses were presented for evaluation of reproductive status (23%), lameness (15%) and castration (13%). Common reproductive diagnoses were uncomplicated castration (13%), barren (9%) and pregnant (8%) mares. Causes of lameness included laceration and wounds (40%), distal limb fractures (15%) and foot abscesses and/or poor foot care (10%). Only 4 cases of colic (3.7%) were presented over the years. Transrectal ultrasonography was the most used imaging tool, followed by radiography and endoscopy. Laboratory analysis was only performed in 15% of all cases.

This is the first report on clinical presentation of working equids at a veterinary care reference center in southern Chile. Most working equids seek veterinary care to aid reproduction and treat conditions related to their use. Findings suggest that animal use, husbandry and welfare can be improved.

Keywords: working horses, diseases, treatment, south America.

INTRODUCTION

Although Chile is classified by the world bank as a high-income country (FAO, 2021), social inequality is high and many families still rely on working equids, both in rural areas and in cities, as a fundamental source of income. Their use is particularly important for harnessing and transport of people and goods, in agriculture as well as in the leisure industry.

Animal health and disease prevention are important to ensure adequate performance and overall welfare of working equids (Tadich *et al.*, 2008; Tadich *et al.*, 2014; Tadich, 2020). Gathering information on common emergency and clinical conditions in working equids, including presentation, diagnostics, treatments and outcome, is important to identify foci for owner education and guide action towards disease prevention and animal welfare. Thus, the aim of this report was to highlight details about the clinical presentation of working equids at a veterinary reference center in southern Chile.

MATERIAL AND METHODS

A convenience sample of cases seen from 2015 to 2021 at the Equine Clinic of the Veterinary Teaching Hospital of the Universidad Austral de Chile, Valdivia, Chile was included. The equine clinic provides *pro bono* veterinary care for working equids of low-income owners at said hospital, through an institutional volunteer program and private donations (AMIVECC, Equine Program, School of Veterinary Sciences, Universidad Austral de Chile). Data from working equids were collected from paper records. The hospital had full diagnostic and surgical facilities and a 24-hour emergency service. Data were retrieved on case presentation, presenting complaint, diagnosis, and outcome. Working equids were defined as equids used for harnessing and transport of people and goods, in agriculture and/or domestic use.

Cases were excluded if the record was missing. When there were multiple appointments for one animal for the same condition in the same period, only the initial visit was recorded and data from subsequent visits were only analysed to determine the outcome (e.g. hospitalization, discharge, euthanasia). If an animal presented with more than one condition at a single visit, multiple morbidities were recorded. Descriptive statistics were used for data analysis.

RESULTS AND DISCUSSION

A total of 107 working equid cases were recorded from 2015-2022 (Table 1). Four of the 107 horses were

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Table 1. Breed, age, sex, body condition score (BCS), presenting complaint, diagnosis, procedures, and outcomes of 107 working equid cases presented from 2015 to 2021 at the Equine Clinic of the Veterinary Teaching Hospital of the Universidad Austral de Chile, Valdivia, Chile.

Year	Cases (n)	Breed	Age (mean±SD)	Sex (years) BCS (mean) (1-9)	Presenting Complaint	Diagnosis	Procedures + Outcome
2015	15	Mixed Breed (n=15)	7.5±6.1			Castration=14 No records= 11 Barren mare= 10 Pregnant mare= 9	<u>Procedures</u> Surgical castration= 15 Foreign body removal=1 Hernia reduction=1
2016	15	Mixed Breed (n=14) Chilean Breed (n=1)	5.8±4.1		Theriogenology Consult= 25	Healthy animals=7 Colic of unknown origin=4 Cycling mare= 4 Asthma= 3	Joint lavage= 1 Surgical wound debridement= 1
2017	12	Mixed Breed (n=10) Chilean Breed (n=2)	10.9±4.8	Mares= 55 BCS= 4	Castration=14	Preputial abscesses=3 Distal limb fracture= 3 Pneumonia=2 White muscle disease= 2	<u>Imaging</u> Ultrasonography= 19 Radiography= 7 Endoscopy= 3
2018	17	Mixed Breed (n=12) Chilean Breed (n=5)	9.4±4.2	Males= 31 BCS= 4	Colic= 6	Septic funiculitis= 1 Umbilical and abdominal herniation=1 Selenium deficiency=1	<u>Lab work</u> CBC=6 Serum Chemistry= 3 Fecal egg counts=2 Bacterial culture= 1 BAL=1
2019	17	Mixed Breed (n=17)	6.3±5	Geldings= 10 BCS= 4	Skin lacerations - wounds= 10	Complications post castration= 3 Suspect EGUS= 1 Septic polyarthritis= 1 SCC eyelids= 1	Synovial fluid analysis= 1 GPx=2
2020	15	Mixed Breed (n=15)	10.3±6.2	Stallions= 11 BCS= 5	Cough=3 Skin neoplasia= 2	Foot abscess/poor hoof care= 4 DDSP, laryngitis= 1 Cryptorchid= 1 Annular ligament lesion= 1	Colostrum check= 1 <u>Outcome</u> Discharged= 53 Euthanasia= 4 NR= 50
2021	14	Mixed Breed (n=14)	7.6±4.9		Weight loss/ weakness= 4	Impaction colic (large colon)= 1 Lice= 1 Parturition= 1 Penetrating wound=1 Periostitis= 1	Hospitalized 1-7d= 32 Hospitalized >7d= 18

mainly used for transport of goods and sporadically riding activities. The age range went from 1 day of age to 19 years (8.2±5.19 years). Sixty five percent of horses (69/107) were under 10 years of age and 28.9% (31/107) over 10 years. The mean body condition score per sex group ranged from 3 to 5/9. A similar number of cases were presented per year (15±1.7 cases). Most of the cases were not hospitalized and discharged the same day of presentation (n=52). Nevertheless, data regarding hospitalization and discharge from 50/107 horses were not recorded. Cases were hospitalized for short periods of time (7±32.1 days) and most were discharged. Most horses were presented for evaluation of reproductive status (23%), lameness (15%) and castration (13%). Final diagnosis was recorded in 93 cases, where the most common reproductive diagnoses were uncomplicated

castration (13%), barren (9%) and pregnant (8%) mares. Common cases of lameness were laceration and wounds (40%), distal limb fractures (15%) and foot abscesses and/or poor foot care (10%). Only 4 cases of colic (3.7%) were presented over the years. Transrectal ultrasonography was the most used imaging tool (n=19), followed by radiography (n=7) and endoscopy (n=3). Laboratory analysis was only performed in 16 cases (Complete Blood Cell count n=6, Serum Chemistry n=3, Fecal Egg Counts n=2).

This is the first report on clinical presentation of working equids at a veterinary care reference center in southern Chile. There are data on general health, welfare, and field veterinary care in this population from previous studies (Tadich *et al.*, 2008; Tadich *et al.*, 2010; Fortini *et al.*, 2011; Tadich *et al.*, 2014; Tadich, 2020). The

predominance of younger horses in this population (65% of all cases were under 10 years of age) could suggest a shorter life span of working horses, possibly due to poor nutrition or insufficient healthcare. Alternatively, there could have been less interest in seeking veterinary care for older animals not used for reproduction with less working capacity, although this should be unlikely due to the *pro bono* nature of the teaching hospital's program for these horses. Similar data was reported in a study from a *pro bono* field healthcare programme provided by Universidad Austral de Chile's School of Veterinary Sciences from 1997-2009 (Valdivia, Chile) (Sáez *et al.*, 2013). In that study, most horses did not have draught-type morphological characteristics, which coincides with this study's findings, and could well be explained from the fact that draught breeds consume more roughage and entail higher maintenance costs for their owners. Although draught breeds and draught crosses are available through government-sponsored programs in the country¹, the lack of draught-type horses in these studies suggest owners' preference for lighter breeds of lesser maintenance costs. Nevertheless, other more practical reasons like costs of transport or access to field veterinary care could also explain this finding. Malnutrition, however, was not recorded in any of the cases, although it is a significant problem in working equids worldwide (Burn *et al.*, 2010). This could also be related to the predominance of Chilean and Chilean-cross horses in this population, a pony breed which is recognized for its hardiness and ease of maintenance. Interestingly, 8% of this study's patients consisted of pregnant mares, which indicates an interest of owners in breeding their animals. A significant subset of patients consisted of specifically evaluated barren mares, which also suggests that working horse owners could be interested in, or benefit from, veterinary programs focusing on equine reproduction.

Wounds and lameness problems were frequent presenting complains in this study population, concurring with the study mentioned above, which reported a predominance of skin and hoof lesions, lameness, and respiratory system signs (Sáez *et al.*, 2013). Detailed information on provided treatments were not specified in all records. Nevertheless, common treatments for the reported problems (lameness, wounds, lacerations, castration, etc.) include the administration of anti-inflammatory drugs and broad-spectrum antibiotics, which is consistent with previous findings (Sáez *et al.*, 2013). Targeted antimicrobial use was only recorded for one case, which could be explained by poor record keeping or cost limitations, but certainly needs to be revised

since it is not in agreement with current antibacterial resistance prevention measures. It is noteworthy that fecal egg counts were only reported in two cases, despite the low cost of the procedure and the recognized usefulness of coproparasitological examination and widespread prevalence of parasite problems in equine populations both locally and worldwide (Geurden *et al.*, 2022; Hernández, 2016). This suggests clinician's dependence on empirical treatment of horses without coproparasitological guidance, and possible misuse of anthelmintic drugs.

Animal welfare was not directly evaluated in this report, but general health is a classical welfare approach (Burn *et al.*, 2010; Broom, 1991). Overall health problems in the studied population were similar to those reported in pleasure and sport horses, but skin lesions and wounds were overrepresented. The presence of skin lesions is common in working horses, generally due to poor fitted harnesses, dermatitis and ectoparasite infestation, as well as injuries while grazing in public green areas (de Aluja, 1998; de Aluja, *et al.*, 2000; Biffa & Woldemeskel, 2006; Burn *et al.*, 2008; Tadich *et al.*, 2010; Tadich *et al.*, 2011; Burn *et al.*, 2010; Sáez *et al.*, 2013). Lameness is one of the main problems affecting working equids (Broster *et al.*, 2009; Fortini *et al.*, 2011; Putnam *et al.*, 2014) and was also one of the main presenting complaints in this report, probably related to climate, animal use, husbandry, and care. There were two confirmed cases of white muscle disease due to selenium deficiency, a well-recognized issue in southern Chile (Rioseco *et al.*, 2013). This could justify preventive monitoring of selenium nutritional status, or empirical supplementation, in this population.

A majority of the cases reported here were evaluated on an ambulatory basis, or hospitalized for short periods of time. Reasons for this are unclear, but could be related to owner's availability or limited funding.

In conclusion, these results show that most working equids seek veterinary care to aid reproduction and treat conditions related to their use. Findings suggest that animal use, husbandry and welfare can be improved. Educational and preventive programmes as well as further research are required to reach adequate health and welfare of this working equid population.

DECLARATIONS

Authors declare no competing interests.

Owner consent for animal evaluation and treatment is provided for all cases presented at the Veterinary Teaching Hospital. Patient and owner confidentiality was kept for data use and analysis.

AUTHOR CONTRIBUTIONS

CDe, CDu and BU participated in case management. CDe collected data from the analyzed records. CDu analyzed the data and wrote the manuscript. CDe, CDu and BU worked on manuscript finalization.

¹ Ramirez-Reveco AR. Generación de un banco de semen de caballos fina sangre de tiro pesado, a partir del diseño de protocolos de Criopreservación para uso en inseminación artificial (IA) en el Plan Nacional de Fomento Equino (PNFE). Programa FONDEF n° D08I1076, Conicyt, Chile.

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