“Boots on the Ground” Rehabilitation Protocols Utilized by Rehabilitation Facilities

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Introduction

Equine rehabilitation protocols elicit much discussion, and some controversy. This is understandable because simple changes in the order, or length of time of treatments may affect the outcome from horse to horse. However, many other issues may also be a factor; such as the breed of the horse, the footing the horse is worked in, the skill of the rider, or the type of discipline the horse performs in, to name just a few.

The problems inherent in developing an appropriate rehabilitation protocol are not unique to the equine world and also exist in human rehabilitation. Two recent studies performed systematic reviews to evaluate human rehabilitation protocols. One study looked at 32 randomized clinical trials to evaluate the similarities and differences in the rehabilitation protocols following anterior cruciate ligament reconstruction. The other study reviewed the role of exercise in the treatment of rotator cuff impingement in 11 randomized controlled trials. When the protocols were compared between all of these studies, the differences were evident. However, the multiple similarities between the protocols did allow the authors to come to conclusions about which protocols were being utilized the most, and had the best outcomes.

During the keynote address of the 2011 FAEP Promoting Excellence Symposium, Dr. Michael Torry made some interesting comments about the protocols they were implementing at a rehabilitation center for elite human athletes. He discussed that the clinic presented protocols upon discharge of the clients from their facility. However, the therapists learned, after some time, that the athletes were not actually following these protocols. The physical therapists were under the impression that their protocols were working, when in reality the actual protocols the athletes were using were quite different.

In comparison, the protocols utilized in equine rehabilitation centers can be easier to obtain due to the direct supervision of the horses by the facilities. This information would be a good reference as equine practitioners and rehabilitation specialists refine protocols for their practice. The purpose of this paper is to obtain information about the protocols rehabilitation centers are currently using and review the differences and similarities. These interviews will offer a first glimpse of the rehabilitation methods being utilized, which could lead to a more extensive review in the future.
Materials and Methods

Managers of 5 large equine rehabilitation centers in the US were interviewed. Information was obtained directly from the people who are the “boots on the ground” workers, those who implement the protocols and oversee the horses on a daily basis during the rehabilitation process.

The managers of the facilities were contacted by phone and were questioned about specifics concerning their facilities and clientele. Each facility was then asked to outline the general protocols they used for the majority of their clients in three categories of admission; surgery/fractures, tears/lesions (grade 3), and sprains/strains (grade 1,2). For the surgery/fracture category, the specifics of the protocol were clarified to determine if the protocol was for one type of surgery, or was a general surgery/fracture protocol. In addition, salient points the manager wanted to bring forward were also included.

All of the facilities wanted to firmly emphasize that the information they were providing was only a general guideline, and that every horse is treated as an individual. The information in this paper reflects what the facilities are doing the majority of the time, and does not cover the full continuum of treatment options, modalities and time for all possible protocols.

Discussion

A review of the information obtained from the 5 rehabilitation facilities showed that they admitted a total of approximately 2650 horses annually. Although the total number of facilities in this survey was small, the total number of horses that were serviced by these facilities every year was large. All of the rehabilitation centers were pleased to be of assistance to this survey and expressed great interest in the results, commenting that they are always searching for more information to refine their protocols further. In addition, the managers were pleased that someone was interested in the work they were doing, and they were interested in sharing their results.

The primary type of horses the centers had as clients fell into 2 basic categories of 50% racing (mostly Thoroughbreds, some Standardbreds and Quarter Horses) and 50% Sport Horses (mostly Warmbloods, Quarter Horses and Saddlebreds). One of the centers (Facility B) specialized in racing, with 85% of their clients being Thoroughbred racehorses.

The primary reason horses were admitted into 4 out of 5 facilities was due to soft tissue injuries, with one facility having arthroscopic chip surgery as the primary reason for admission.

The second most common reason for horses being placed into rehabilitation, in 3 out of 5 centers, was for conditioning of yearlings, weanlings, 2-year olds and mature horses. The other 2 facilities commented that their second most common
admission reasons were for; arthroscopic chip surgeries, stress fractures and bone bruising, or problems in the fetlock and below.

Only one facility felt that the majority of the veterinarians did not value their opinions and did not asked for advice when deciding on the appropriate rehabilitation protocol. Unfortunately, due to the lack of collaboration between this rehabilitation facility and the veterinarians, some of the protocols the practitioners wanted executed were impractical, and at times impossible, to perform by the manager.

Follow-up treatments or evaluations of the horses, after the protocols were completed, was 30-50% in 2 facilities, with the other 3 centers commenting that they followed up on less than 30% of the horses treated at the facility. The low percentage of the follow-up information about the long-term results of the rehabilitation protocols reduced the value of the data, because there was limited information to see if the horses were able to sustain the improvement. If a means existed to obtain follow-up data, this may prove to be an asset for the centers to further refine their protocols.

However, all centers were pleased with the progress of the horses during rehabilitation, and felt their protocols were working well while the horse was under their care. In addition, the periodic re-checks by the attending veterinarians also indicated if the protocol was appropriate and healing was occurring. All facilities scheduled sequential imaging to determine how the rehabilitation protocol was progressing and if the horse should continue to move forward with more strenuous rehabilitation.

There were three modalities that all facilities utilized and found effective; cold water spa, underwater treadmill and vibrating platform. Two of the facilities noted that they would use other modalities when needed with certain horses, or if they had specific requests.

Comparisons between the protocols in shows many differences as well as similarities. Upon first glance it appears that there was a large variation in the amount of time spent in rehabilitation for the three categories. However, it must be noted that some facilities continued the rehabilitation process longer than others, which included riding the horses. Three of the 5 centers included work under tack in their rehabilitation protocols, while 2 of the 5 facilities discharged the horses when they were ready for work under tack.

The comparison of the time the horses spent in stall rest between all 5 centers is found in TABLE 1. There was a general consensus that minimal stall rest was preferred, and all centers attempted to get the horses out walking as soon as possible. Only one facility used a longer period of 3 wk of stall rest after arthroscopic chip surgery. However, the stall rest at this center was supplemented by daily use of the vibrating platform.
<table>
<thead>
<tr>
<th></th>
<th>Facility A</th>
<th>Facility B</th>
<th>Facility C</th>
<th>Facility D</th>
<th>Facility E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>0; if possible</td>
<td>0-2; with hand grazing</td>
<td>3; with vibrating platform</td>
<td>0; if possible</td>
<td>0-2; with hyperbaric</td>
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<td>2-3 d</td>
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<td>0-2</td>
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<td>0-3; with hand grazing</td>
<td>0</td>
<td>0</td>
<td>2-3 d with vibrating platform</td>
</tr>
</tbody>
</table>

TABLE 1. Time in weeks spent in stall rest

One similarity between all 5 protocols was the utilization of a water treadmill. TABLE 7 compares the minimum time when each of the facilities began walking the horses on the water treadmill. When walking was begun after surgery (2-4 wk) or with sprains/strains (0-3 wk), the time frame was similar. However, a wider variation (1-8 wk) existed with the protocols for tendon tears/lesions. Every center commented that the protocol for tendon tears/lesions was the most difficult to generalize because it contained the most variation when implemented. This point is evident when comparing the time frames to initiate water treadmill work between the 5 different facilities. However, interestingly the minimal stall rest time for tendon tears/lesions is similar (TABLE 1).

The two facilities listed in TABLE 2 with the longest time before walking in the water treadmill for tear/lesions (8 wk) were Facilities B and D. Facility B worked almost exclusively with racing thoroughbreds (85%) while Facility D saw a different demographic of; 50% 2-yr and younger Thoroughbreds that were not racing, and 50% Sport Horses.

Facility C waited the shortest period of time (1 wk) before working the horses in the water treadmill. Facility C admitted 60% Thoroughbred racehorses (with a few QH racehorses) and 40% performance horses. It doesn’t appear that, with this sample size, any conclusion can be made that the type of horse the center predominately sees dictates the rehabilitation protocol. Although the performance requirements of racing and sport horses are different, the rehabilitation protocols may not reflect a similar difference.

Two of the facilities commented that the reason they felt there was so much variation in the protocols they used for tears/lesions was due to the lack of a reliable diagnosis. When the imaging was performed by 2 different practitioners, the managers were sometimes given 2 different diagnoses of the type of tendon
injury. Therefore, the facilities were uncertain which protocol to follow. Perhaps the lack of a conclusive diagnosis may be one of the reasons there is a wide variation in the time frames and modalities found in successful protocols.

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<td>2</td>
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<td>3</td>
</tr>
<tr>
<td>Tear/Lesion</td>
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<td>1</td>
<td>8</td>
<td>5</td>
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<tr>
<td>Grade 1,2</td>
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Table 2. Minimum time in weeks when protocol included walking on the water treadmill

**Summary**

A survey of 5 large rehabilitation centers in the US was initiated to review the protocols that are currently being utilized. Interviews were taken from the managers of these facilities who are the “boots on the ground” workers who implement the protocols and observe the horses on a day-to-day basis during rehabilitation. All of the centers interviewed were interested in sharing their knowledge and cooperated willingly with the survey.

Information was collected about the general rehabilitation protocols used for the majority of their horses in three categories; surgery/fracture; tendon tears/lesions (grade 3); strains/sprains (grade 1,2). Annually, these five facilities see a total of approximately 2650 horses.

Four out of 5 rehabilitation centers said that they work in collaboration with the attending veterinarian to develop a rehabilitation protocol. Only one center said that most of the veterinarians they work with do not ask the manager about their opinion when developing the rehabilitation protocols.

Long-term follow up of clients was difficult for most centers with only one facility having a 50% follow up with the horses once they were discharged. Most facilities were only able to follow up with under 30% of their clients. However, all managers used sequential imaging to determine if healing was progressing and if the horses should move to the next level of rehabilitation. An improvement in follow-up documentation may assist the centers in better evaluating the success of their protocols.

Similarities between the 5 facilities were found to exist and included; the types of modalities used, the amount of time they stall rested the horses, and the use of imaging to determine the progression of the rehabilitation. Popular modalities
included the water treadmill, cold salt water spa and the vibrating platform. All centers commented that they stall rest the horse as little as possible and get them out of the stall most days to at least graze. Imaging was done by all facilities to check on the progress of the rehabilitation protocols.

Differences between the facilities included how long after the initial injury/surgery the horses were first asked to walk on the water treadmill. These differences could be due to the large variation the centers see in the successful protocols for this type of injury. In addition, some of the centers felt they are not always sure what grade of lesion they are treating due to the lack of a conclusive diagnosis. Another large difference between the facilities total time spent at the center for rehabilitation. Some facilities returned the horses fit and ready to go back to work, while others discharged the horses when they were ready to start work under tack.

This survey offers a first glimpse of what protocols are being used in equine rehabilitation in a select number of facilities. Facilities of this type have an immense amount of valuable information about rehabilitation protocols and this information can prove to be a useful contribution to the science of rehabilitation. Continued data collection will help to refine the results further.

Bibliography
