

## CHAPTER I

### INTRODUCTION

The equine back is composed of an axial skeleton that starts from the horse wither to the sacroiliac joint. Equine back problems are considered as one of the major causes of alterations in gait and performance. The incidence of back problems in horse in a general practice setting has been reported as 0.9 % (1). Conformation, breed, and the use of the horse are important factors that lead to the type and the location of injuries (2). For example, specific spinal malformations (e.g., lordosis and scoliosis) tend to be predisposed to an injury through the inherent weakness of the back and/or bow arrangement of the thoracolumbar spine (3).

A poor performance of the horse caused by chronic back pain is common in various breeds when performing various types of work (4). Jeffcott reported that the differences in the incidence of specific back problems varied quite noticeably according to whether the horses were involved in jumping at speed, jumping competitively, or were not used for jumping at all. Acute sacroiliac strain or subluxation was more prevalent in horse jumping at speed, whereas overriding of the dorsal spinous processes (kissing spine) was most common in show-jumpers. The incidence of soft tissue damage was about the same in both of these two groups. The age of the horse is not nearly as important a factor in equine back disorders as it is in humans. Spondylosis deformans appeared more frequently in mares. Overriding of a dorsal spinous processes was most often seen in short-backed Thoroughbred geldings (3).

Discerning primary back pain and localizing the pain are not difficult; however, it is difficult to identify the exact cause of pain (2, 4-7). A specific

pathogenesis of many back problems is unknown (3). The most common sign associated with a back problem was the change in the attitude of the horse, e.g. the horse would begin to “buck” or become “girth”, or in the case of a jumping horse, the horse would begin to refuse fences (8). Clinically, these horses do not usually show signs of lameness, but the trainer or the owner may perceive that a horse has back pain from many clinical signs, including sensitivity to grooming and saddling resistance to the rider’s weight, overall body stiffness, poor performance, and pain on palpation of the muscles over the back. Many of these signs are also common to other diseases or injuries and may be secondary symptoms of clinical or subclinical hindlimb lameness resulting in an altered gait. Primary back pain may be a result of severe muscle strain, impingement or overriding of the spinous processes, disc spondylosis, sacroiliac desmitis, supraspinous desmitis, osteoarthritis of the facet joints, and sacroiliac joint pain (9).

#### **Acupuncture for back pain in horses**

Acupuncture has received much publicity and notoriety in the past 20 years, and The lay people, the press, the human medical and veterinary medical communities have expressed an interest in its use. A tremendous increase in interest has also taken place in holistic medicine and alternative therapy. Acupuncture became one of alternative therapies for the treatment or alleviation of chronic back pain when drugs are not desired or allowed. Alternative therapy may also be chosen as an adjunct to a traditional treatment or when other treatments are ineffective. The amount of information on the treatment of chronic back pain in horses has lately increased. An

understanding of basic principles of acupuncture is necessary in the decision process in using acupuncture in the treatment of chronic back pain (10, 11).

Veterinary acupuncture began in either India or Tibet, more than 1,000 years ago. It was subsequently spread to China. The Chinese were the first to apply acupuncture in an organized fashion. They also discovered and classified points and meridians, and developed strict methods of acupuncture based on centuries of organized observations (10). Diagnosis and treatment of equine back pain was first documented in detail in the ancient Chinese veterinary textbook “*Yuan-Heng Liao Ma J*” (*Yuan-Heng’s Therapeutic Treatise of Horses*) published over 380 years ago (12). Since then acupuncture has been used to treat equine back pain in China since then (13, 14).

Acupuncture spread from China to Europe through a Jesuit priest who introduced it to France in the early 1600s. The use of acupuncture increased in Europe, and was then introduced in North America in the 1800s, where it was confined primarily to the Chinese community. After the improvement of political relations between the United States and Mainland China in the 1970s, acupuncture began to be utilized by the mainstream medical communities in the United States. In the mid-1970s, the National Veterinary Acupuncture Society was established (15). The American Veterinary Medical Association recognizes veterinary acupuncture as a valid treatment modality and an integral part of veterinary medicine (16).

In Thailand, acupuncture has never been used for treating horses with back pain and the effectiveness of this technique over the others is unknown. In current study, the effect of electro acupuncture on back pain in horse was compared against rest. Level of pain was evaluated using pressure algometer.

There are two main parts of this thesis, two preliminary study and main study. The preliminary study was performed to investigate the prevalence of back pain in riding horses in Thailand, and to study the tolerance to pressure algometry in horse suffering from back pain. The objective of the preliminary study was to use the results as a baseline for the main study.

### **Study Objective**

To compare the effectiveness of electro-acupuncture and rest for back pain in horses

### **Hypothesis**

H1: Electro-Acupuncture is effective in reducing back pain in sport horses compared with rest