

Veterinary Acupuncture: Indications and Contraindications

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What is Acupuncture

Acupuncture may be defined as the stimulation of a specific point on the body, referred to as an “acupoint”. Physiological changes in response to acupuncture point stimulation is the basis of clinical treatment. Some of these changes include release of endogenous opioids, immune system stimulation, and blood pressure regulation. Stimulation of an acupoint causes activation of A α and A β nerve fibers to conduct electrical signals through the spinothalamic tract to the hypothalamus and cause release of β -endorphins. Acupuncture also causes activation of the descending pain inhibitory pathway which activates the periaqueductal gray matter to release more β -endorphins and the nucleus raphe magnus to release serotonin¹. Pain is blocked with the release of these endogenous opioids and neurotransmitters. Acupuncture can also activate T-cell lymphocytes and increase the number of white blood cells for the treatment of pathologies due to immuno-deficiency.²

Many techniques have been developed to stimulate “acupoints” such as dry-needle, electro-acupuncture, and aquapuncture³. Dry-needle is the insertion of an acupuncture needle into an acupoint for stimulation of that point. The needles are filiform, sterile and of varying widths and lengths. Dry-needle is the most common treatment modality used in veterinary medicine. Electro-acupuncture is the attachment of electrical leads to dry-needles and connection to an electro-acupuncture machine. The purpose of using the electro-acupuncture machine is to control the frequency and amplitude applied to each point. This allows for more effective stimulation than dry-needle alone. Aquapuncture is the injection of a soluble, sterile medium into acupoints. The purpose is to provide a constant stimulation via the physical pressure induced by the liquid injected into the acupoint. The most commonly injected substances are saline, or Vitamin B₁₂.

Acupuncture as a Valid Treatment

The U.S. National Library of Medicine can be searched through PubMed at: <http://www.ncbi.nlm.nih.gov/pubmed/>. An increasing volume of scientific research has been performed on the basic mechanisms and clinical applications of acupuncture in both animals and humans. As of June 1, 2010, a database search using the keyword “acupuncture” and limited only to papers with ‘abstracts’, produced 15,181 papers on acupuncture published in English. Among these research papers, 282 articles are specific to veterinary medicine, and provide evidence to validate Chinese acupuncture theories and effectiveness. Furthermore, they support the use of acupuncture as a safe and effective treatment for many disorders in animals.⁴

In 1997 the National Institutes of Health (NIH) published a consensus paper on acupuncture.⁵ This was the result of several days of expert scientific presentations and discussions by an independent group of professionals. They concluded: “Acupuncture, as a therapeutic intervention, is widely practiced in the United States. While there have been many studies of its potential usefulness, many of these studies provide equivocal results because of design, sample size, and other factors. The issue is further complicated by inherent difficulties in the use of appropriate controls, such as placebos and sham acupuncture groups. However, promising

results have emerged, for example, showing efficacy of acupuncture in adult postoperative and chemotherapy nausea and vomiting, and in postoperative dental pain. There are other situations such as addiction, stroke rehabilitation, headache, menstrual cramps, tennis elbow, fibromyalgia, myofascial pain, osteoarthritis, low back pain, carpal tunnel syndrome, and asthma, in which acupuncture may be useful as an adjunct treatment or an acceptable alternative or be included in a comprehensive management program. Further research is likely to uncover additional areas where acupuncture interventions will be useful.”⁵ The evidence for the efficacy of acupuncture treatment for many medical conditions has increased exponentially since that time and the consensus statement has not been updated; therefore, the NIH refers readers to their source of updated health information from the NIH National Center for Complementary and Alternative Medicine, which has an updated overview of the use of acupuncture for human disease.⁶

In 2003, the World Health Organization (WHO) published a review of the scientific evidence for acupuncture treatment of various medical conditions. After analysis of the clinical trials of acupuncture, the WHO concluded that acupuncture had significant therapeutic effects for a large number of human medical disorders. The WHO report listed 28 symptoms, diseases and conditions for which acupuncture has “...been proved - through controlled trials - to be an effective treatment,” including but not limited to numerous types of pain, allergic rhinitis, nausea and vomiting, and elevated and decreased blood pressure. The review also listed an additional 63 conditions for which, “The therapeutic effect of acupuncture has been shown, but for which further proof is needed.”⁷

A variety of research studies have confirmed the efficacy of acupuncture in veterinary medicine. Fifty dogs with thoracolumbar intervertebral disk disease were randomly allocated to one of two treatment groups and classified as having grade 1-5 (grade 1 = mild and grade 5 = severe) neurologic dysfunction. The conclusion of the study was that electro-acupuncture combined with standard conventional medical treatment was not only effective, but resulted in a shorter time to recover ambulation and deep pain perception, than did the use of conventional treatment alone in dogs with thoracolumbar intervertebral disk disease.⁸ Dr. Joaquim and his colleagues conducted a similar and further study.¹³ Forty dogs with severe neurologic signs to thoracolumbar IVDD were divided into three treatment groups: decompressive surgery (DSX), electroacupuncture (EAP), and DSX followed by EAP (DSX + EAP). Researchers concluded that EAP was more effective than DSX for recovery of ambulation and improvement in neurologic deficits in dogs with long-standing severe deficits attributable to thoracolumbar IVDD.⁹

Applications of Acupuncture in Animals

Acupuncture can be used for a variety of clinical conditions in animals, especially chronic diseases. Acupuncture is most commonly used in three areas, namely pain management, geriatric medicine, and sports medicine.¹⁰

Acupuncture for Pain Management

Acupuncture is reportedly effective for the treatment of various painful conditions in animals including cervical, thoracolumbar and lumbosacral pathologies, chronic lameness, degenerative joint diseases, and colic. Acupuncture stimulation produces an analgesic effect, generally called acupuncture analgesia. The release of β -endorphins may be one of the pathways in which acupuncture relieves pain.

Acupuncture for Geriatric Medicine

Geriatric patients suffer from a variety of conditions that can be treated with acupuncture. Many geriatric patients have generalized pain, arthritis, hind end weakness, and chronic diseases that hinder their quality of life. Some of these patients are also too weak to undergo conventional therapy and thus require an alternative to treatment that is safe and effective. Acupuncture can effectively treat geriatric patients and improve their quality of life. Table 1 depicts numerous diseases that affect the geriatric patients and the acupoints that can be used for treatment.

Acupuncture for Sports Medicine

Animals can suffer from exercise-related diseases such as chronic pain, arthritis, injury to tendons and ligaments, joint injuries, muscle injuries, and bone injuries. Acupuncture can treat these diseases by relieving pain and promote healing to the affected areas by increasing blood flow. Table 1 has examples of exercise-related diseases and the acupoints that can be used for treatment.

Cautions and Contraindications

Certain cautions must be taken when treating weak or debilitated patients. The use of fewer acupoints are used for weak or geriatric animals. When treating performance animals, wait a couple of hours after training or racing sessions before starting any acupuncture treatment. Acupoints around the thoracic cavity (e.g., BL-13 to BL-17) require an insertion distance for the needles that is shorter for other acupoints. Be cautious when using moxibustion in the summertime because it warms the body and might lead to too much heat. Be cautious when using hemo-acupuncture in the wintertime because blood loss can lead to a cooling of the body. Be cautious when using points around the eyes as to not puncture the globe. Although rarely a problem in animals, electro-acupuncture must be done very cautiously in patients with pacemakers.

There are no specific diseases that cannot be treated with acupuncture. However, there are certain contraindications of needle insertion based on the location of the acupoint or health status of the patient. Contraindications for certain applications of acupuncture include the following: 1) never insert a needle directly into a tumor or open wound, 2) never use a needle at acupoint CV-8; only moxibustion is used at CV-8, 3) never use certain acupoints (i.e., ST-36, SP-6, BL-40, BL-60 and BL-67), as well as points around the lumbar and lower abdominal regions during pregnancy, 4) never use electro-acupuncture on seizure patients, 5) never use hemo-acupuncture on weak or geriatric animals

Conclusion

Acupuncture can be used to treat a variety of diseases including pain, geriatric diseases, and exercise-related diseases. Different acupoints and different methods of stimulation can be employed to treat specific diseases. Although few, there are cautions and contraindications to using acupuncture therapy. Therefore, it is highly recommend that a licensed veterinarian take a certification course in veterinary acupuncture before implementing it as part of their practice. With the increasing amount of clinical trials and research being performed using acupuncture therapy, we have a better understanding of acupuncture's mechanism of action. Clinical evidence has shown that our animal patients greatly benefit from this recent understanding and application.

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Table 1

Specific medical conditions and the acupoints used for therapy

Medical Condition

Acupoints

Pain Conditions:

Cervical pain	SI-3, LI-4, BL-10, Fu-tu, huao-tuo-jia-ji
Back pain	Bai-hui, Shen-shu, BL-18, BL-23, BL-40, BL-67
Degenerative joint disease	BL-11, KID-3, BL-23, BL-60, GB-39
Abdominal pain	Jiang-ya, TH-1, Dai-mai, ST-2, BL-21
Postoperative pain	Bai-hui, SI-9, LIV-3, Shen-shu
Soft tissue injuries, muscle soreness	BL-21, BL-20, SI-9, BL-54 and local points

Geriatric conditions

Degenerative joint disease, hip dysplasia, and intervertebral disk disease	BL-11, BL-60, BL-23, Bai-hui, Hua-tuo-jia-ji
Chronic renal failure	BL-23, KID-3, BL-21, ST-36, Shan-gen
Congestive heart failure	BL-14, BL-15, HT-7, An-shen
Oncological diseases	ST-36, LI-4, GV-14
Chronic diarrhea, inflammatory bowel disease	ST-36, GB-34, GV-1, Wei-jian
Chronic constipation and megacolon	CV-12, ST-25, ST-37, GV-1, TH-6
Megaesophagus, vomiting	GB-34, PC-6, CV-23, CV-22, CV-12
Chronic gastric disease, anorexia	Shen-gen, Jian-wei (Mi-jiao-gan), BL-21, ST-37
Immunodeficiency	LI-10, LI-4, ST-36, GV-14, KID-27
Infertility	Yan-chi, BL-26, GV-1, Bai-hui
Seizure disorders	GB-20, LIV-3, GV-1, BL-18, SP-10
General weakness	KID-1, PC-8, LI-10, ST-36, GB-34
Vestibular diseases, degenerative myelopathy	Da-feng-men, Tian-men, GV-14, Wei-jian, Bai-hui
Separation anxiety, behavioral problems	An-shen, HT-7, BL-14, BL-15
Skin allergies	BL-17, SP-10, Wei-jian, Er-jian

Chronic asthma

Chronic uveitis

Chronic otitis

Exercise-related conditions

Musculoskeletal soreness

Tendon/ligament injuries

Enhancement of performance/agility

Ding-chuan, BL-13, CV-22, LU-9, KID-7

BL-1/2, ST-1, Tai-yang, GB-1, GB-37

SI-19, TH-17, Er-jian, KID-1, Er-men

Local points + BL-21, BL-40, LIV-1, ST-45, TH-1

Local points + GB-34, GB-41, LIV-3, BL-18,

BL-21, BL-26, Qi-hai-shu, Yan-chi, Dan-tian, GV-4