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Alternative Therapies in Camelids

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Terminology

• Holistic Medicine
  • Emphasizing the whole patient, including analysis of physical, nutritional, environmental, emotional, social, spiritual and lifestyle values.
  • Includes all modalities of diagnosis and treatment including drugs and surgery if no safe alternative exists.

• Alternative Medicine
  • Medical techniques not known or accepted by the majority "conventional" or "allopathic" medical practitioners (M.D.'s, D.V.M’s). Include non-invasive, non-pharmaceutical techniques such as Herbalism, Acupuncture, Homeopathy, Reiki, etc.
HOLISTIC CONSIDERATIONS

- History
- Temperament
- Diet!!!
- Water
- Environment/Housing
- Weather
- Competition?? Stress??
- Social groups/Relationships
- How many other animals??
- Maintenance schedules
ALTERNATIVE THERAPIES

Acupuncture
Herbal Therapies
Massage
Food Therapy
Chiropractic
Physical Rehabilitation
Nutraceuticals
Hyperbaric Oxygen Therapy (HBOT)
Stem Cell Therapy
Homeopathy
Today:

- Acupuncture
- Herbal Therapy
- Physical Rehabilitation
- Hyperbaric Oxygen Therapy (HBOT)
Acupuncture

• Insertion of fine, sterile needles into specific points, ACUPORTS, on the body to cause a desired physiologic response
Acupuncture

Is one part of a Traditional Chinese Medical (TCM) System:
- Acupuncture
- Tui-na
- Herbal Medicine
- Food Therapy
Acupuncture Outside of China

The Iceman

- Oetzi
- 3,300 B.C. (5,300 yo)
- 57 Tattoos
Veterinary Acupuncture

• 2700 B.C.
  Huang Di ‘The Yellow Emperor’s Classic of Internal Medicine The Neijing

• 974-928 B.C.
  Zao Fu 1st to use hemo-acupuncture for equine heatstroke

• 502-557 B.C.
  Bole (Sun Yang) Bole’s Canon of Veterinary Acupuncture and Moxibustion, Bole Zhenjing
Classical Acupuncture

Illustration of acupoints on the body of a horse from Ma Nu Yi Fang, a Chinese Veterinary Text written in 1399.
Potential uses of acupuncture

• Pain
• Nerve Paralysis
• Appetite stimulation/GI motility
• Immune modulation
• Any visceral imbalance
• Wound healing/Improve blood flow
• Antipyretic (fever reduction)
• Anxiety/depression
• Improved athletic performance
Research in Ruminants

• **Antipyretic** Nam et al. 1994; Chang et al 1993

• **Digestion** Nam et al. 1997; Lee et al 1998; Nam et al 1987; Choi et al. 1993; Chang et al 1994

• **Respiratory** Nam et al 1996

• **Reproduction** Chang et al 1996

• **Immunologic Effects** Gao et al 1995

• **Urinary** Lee et al 1993; Kim MC and Park KM 1996

• **Downer Cows** Kim et al 1995
How Acupuncture Works

• Local Effects
• Systemic/Humoral
  Endogenous opioids!
• Visceral
• Peripheral Nervous System
  • A-delta fibers → inhibition of slower C fibers in substantia gelatinosa of dorsal horn
  • RESETS CHRONIC PAIN
• Central Nervous System
Methods of Acupuncture

• Dry needling
• Electro-acupuncture
• Moxibustion
• Aqua-puncture
• Phototherapy/LASER
Contraindications
• Pregnancy
• Tumor
• Infection
• Steroids
• Seizures (EA/Moxa)
• Hypotension/weakness (EA/Moxa)
For more info:

- Veterinary Acupuncturists should be CERTIFIED
- International Veterinary Acupuncture Society www.ivas.org
- The Chi Institute www.TCVM.com
- American Academy of Veterinary Acupuncture www.aava.org
- Colorado State www.colostate.edu
Herbal Therapy

• The use of botanical substances to achieve a beneficial therapeutic effect

• 60,000 years ago
  • Neanderthal burial site, "SHANIDAR-4", in northern Iraq pollen from 8 plant species, 7 used now as herbal remedies

• 5,000 years ago
  • Sumerians described medicinal uses for such plants as laurel, caraway, thyme.

• 2700 BC
  • China- ‘Shennong Bencao Jing’
Herbs In Camelids

- Modified ruminants
- Complex 3 compartment stomach (C1, C2, C3)
- C1 full of bacteria (poss degradation of drugs)
- Oral administration can be challenging
- Unreliable bioavailablility
- Omeprazole 2% bioavailability in camelids (no difference with 2x-3x equine dose) Smith, G 2006

- Rectal suppository

- Parelaphostrongylus tenuis,
Physical Rehabilitation

• The science of the application of biomechanics, physics, anatomy, physiology, and psychology to patients with dysfunction, injury, pain or physical abnormality.
Modalities used in Rehab

- Range of motion exercises/stretching
- Pulsed electromagnetic frequency
- LASER (*Light Amplification of Stimulated Emission Radiation*)
- Therapeutic ultrasound
- TENS
- Thermal therapy
- Massage
- Acupuncture
- Chiropractic
- Balance board/ball/Incline work
- Hydrotherapy
- Orthotics
- ++ More!!
Balance Ball
Wheels??
Meet Holli
Hydrotherapy

Alpaca swimming for Rehab!!
What about us??

• Underwater Treadmill??

• Floating!!!
Orthotics

www.anchorot.com
Bionic Llama??

Tripod getting fitted for bionic prosthetic
www.orthopets.com
Hyperbaric Oxygen Therapy (HBOT)

• In the chamber
  • Increasing the pressure while patient breathes high concentrations of \( \text{O}_2 \) causes an increase \( \text{O}_2 \) concentration in the blood
  • ↑ as much as 15 x
Goals of HBOT

• Goal is to ↑ the amount of O\textsubscript{2} delivered to the diseased tissue to help it heal
  • Blood flow to diseased tissue is compromised → ↓ the amount of oxygen available for tissue healing

• ↑ tissue O\textsubscript{2} levels in diseased tissue, improves and speeds healing, improves body's ability to fight infections, ↓ inflammation and swelling

• Hyperbaric O\textsubscript{2} therapy is both a primary treatment and a complementary therapy
Contraindications

• There are few side-effects/contraindications

• Pneumothorax

• May increase the toxicity of some chemotherapeutic drugs
In Humans

• Carbon monoxide poisoning
• Acute smoke inhalation
• Non-healing wounds (diabetic wounds/decubitus ulcers)
• Decompression sickness (bends)
• Osteomyelitis
• Radiation necrosis
• Brain injury
• Autism
• Multiple sclerosis
Use in Animals

• Fractures
• Tendonitis/desmitis
• Reperfusion diseases (severe muscle damage, crush injuries)
• Enteritis and endotoxemia
• Ileus (loss of intestinal motility)
• Infertility (male and female)
• Infection (anaerobic)
• Osteomyelitis (bone infection)
• Septic arthritis (joint infections)
• Wounds/Burns
• Neurologic disease and trauma
• Severe necrosis (as in snake and spider bites, toxic substances, etc.)
Limitations?

- Patient temperament
- Client Commitment
  - Time
  - Money
- Little data/research in these areas for camelids
Conclusions

• Alternative Therapies are available for camelids
  • Physical Therapy Department
  • Alternative Medicine Department
  • Ask!!

• Must work within limitations

• More research is needed!!
Questions?
References

• Donald P. Thomson, DVM, CVA, 10TH ANNUAL TCVM CONFERENCE. CHONGQING, CHINA, 14-19 SEPT

• Millis, Daryl. Canine Rehabilitation Course. Small Animal Rehabilitation Certification Program, University of Tennessee, 2009

• Schoen, Allen. Veterinary Acupuncture


• HBOT http://www.vet.utk.edu/departments/LACS/hbot.php