Alternative Therapies in Camelids

Debra Voulgaris
University of Tennessee - Knoxville

Follow this and additional works at: http://trace.tennessee.edu/utk_largpubs

Recommended Citation
ALTERNATIVE THERAPIES IN CAMELIDS

Dr. Debra Voulgaris DVM, MA, CVA
Anesthesia Resident
April 2, 2011
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, ACUPOINTs, 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 slow C fibers in substantia gelatinosa of dorsal
- 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 Bencaoj 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 bioavailability
  - Omeprazole 2% bioavailability in camelids (no difference with 2x-3x equine dose) Smith, G 2006
- Rectal suppository

DONALD P. THOMPSON, DVM, CVA, 10TH ANNUAL TCVM CONFERENCE. CHONGQING, CHINA, 14-19 SEPTEMBER

- 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 electro magnetic 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 $O_2$ causes an increase $O_2$ concentration in the blood
  • ↑ as much as 15 x
Goals of HBOT

- Goal is to ↑ the amount of O₂ 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 O₂ levels in diseased tissue, improves and speeds healing, improves body's ability to fight infections, ↓ inflammation and swelling

- Hyperbaric O₂ 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
HBOT
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