Chronic pain: a practical approach to multimodal management – rehabilitation with non-medical therapies and acupuncture

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Within the framework of a biopsychosocial model of chronic pain, the practitioner has an extensive roadmap for implementing novel interventions to improve quality of life and modify the intensity of pain. Such interventions include acupuncture, exercise therapy, manual therapy, thermotherapy and electrotherapies. Attempts are often made to separate the biological from the psychosocial aspect of pain. To do so, however, oversimplifies the multifaceted nature of pain and potentially explains our frequent failure to manage adequately pain long term. By adopting a multimodal approach, targeting the multifaceted nature of the condition, we can be more effective in our treatment and long-term management.

The biological aspect of chronic pain is often the easiest for a clinician to appreciate and to target with treatment strategies. Homeostasis within body tissues is maintained through a balance of adaptive remodelling in response to physiological challenge. There is a fine line, however, between physiological adaptation and pathological tissue damage. Excessive load on individual body structures, either through compensatory movement patterns, weight gain or muscle atrophy, can exceed the tissue's regenerative capacity. This often results in local inflammation, motor adaptations and fascial tightening, with secondary implications for regional blood vessels and nerves. A structured exercise regime with precise neuromotor training can improve the quality of movement patterns and help redistribution of load within the body. Exercise intervention can also have a non-specific pain-modulating effect and an increasing number of reports have shown the ability of extended and regular exercise to alleviate neuropathic pain through a wide range of mechanisms.

Cryotherapy has the ability to modulate the inflammatory process in superficial body tissues. Through altering tissue metabolic rate and nerve conduction velocity it can influence tissue damage and the nociceptive input in the acute inflammatory stage. Thermotherapy can also

be used to manipulate the state of connective tissues ground matrix and influence tissue elasticity and responsiveness to manual therapy. Acupuncture can function as an effective adjunctive pain-management tool, and there is an increasing body of evidence supporting its use in chronic pain.

Whilst, at first glance, it may be difficult to appreciate the role of the psychosocial aspect of pain management in the veterinary field, there is an increasing body of evidence documenting the interplay of owner and pet emotions and interaction. Altering owners' perception and responses to their pets' pain and mobility issues is often the key to successful pain management in their pets.

KEY LEARNING OBJECTIVES

- Understand the biopsychosocial model of chronic pain as a framework for targeted multimodal intervention
- Understand how patient–owner interaction may direct multimodal therapy
- Be familiar with the components of multimodal therapy

MULTIPLE CHOICE QUESTIONS

1. What is the mechanism of cryotherapy?
 - (A) Increase histamine and bradykinin release from damaged tissues
 - (B) Increase the rate of conduction along sensory and motor nerve fibres
 - (C) Increase tissue metabolic rate
 - (D) Reduce the rate of conduction along sensory and motor nerve fibres
2. Which of the following statements regarding fascia is correct?
 - (A) Fascia is inert
 - (B) Fascia is a physiologically active tissue with fibroblastic cells, contractile elements and cells which secrete hyaluronic acid
 - (C) Fascia is mainly composed of elastin fibres
 - (D) Fascia is composed of less than 5% water
3. Which of the following statements regarding pain is correct?
 - (A) Chronic pain is characterized by ongoing tissue damage
 - (B) Nociception and pain are one and the same
 - (C) Tissue injury and overload, aberrant activation of primary nociceptors and immune system changes can all contribute to the chronic pain state
 - (D) The biological component of the biopsychosocial model of pain is the most important component