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Understanding the Pathophysiology of Acute Pain: Implications for Treatment

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Abstract

Acute pain, an essential protective response triggered by noxious stimuli, plays a vital role in signaling potential tissue damage. However, when inadequately managed, it can cause considerable suffering and functional impairment. This review delves into the intricate pathophysiological mechanisms governing acute pain, focusing on nociceptive signaling where specialized sensory neurons transmit pain signals in response to harmful stimuli. Neuroplasticity in the central nervous system contributes to pain amplification and persistence, involving changes in synaptic connections and neurotransmitter activity. Furthermore, inflammatory mediators released at the injury site sensitize nociceptors, intensifying pain perception. Insight into these mechanisms is critical for refining therapeutic strategies. Effective management spans pharmacological interventions like analgesics and anti-inflammatories, to non-pharmacological approaches such as physical therapy and cognitive-behavioral techniques. By integrating these insights, clinicians can tailor treatments to mitigate acute pain's impact comprehensively, addressing both its physiological triggers and the resultant emotional and functional repercussions for improved patient outcomes.

Keywords: [illegible]

Introduction

[illegible]

Background

[illegible]

[illegible]

Results

[illegible]

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Discussion

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