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Clonidine: clinical pharmacology and therapeutic use in pain management.

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Author information

Abstract

Pain is an unpleasant sensory perception warning of actual or impending tissue damage. Pain serves a vital physiological role, however, severe and uncontrolled pain in the peri-operative setting can adversely affect outcome from surgery and lead to chronic pain. Multiple neurochemical and receptor processes are involved in pain perception but the role of pro-inflammatory cytokines and adrenergic pathways has only recently been recognised. Clonidine is an agonist at the alpha2-adrenergic receptor that has been in clinical use for over 40 years. Clonidine was recognised at an early stage as having analgesic properties however its systemic use was frequently limited by side-effects. Recent advances in anaesthetic practice, allowing more targeted drug delivery and a better understanding of the basic physiology of pain have led to a re-evaluation of the role of clonidine in pain management. Experimental and clinical studies have identified a diverse action of clonidine in modifying not only the adrenergic component to pain perception but also an important effect on modifying the neurohumoral response to tissue injury. This has implications for the management of a diverse range of pain problems and potentially offers a method of preventing the transition from acute to chronic pain. Clonidine is likely to play an increasing role in clinical practice in anaesthetics and pain management.

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