


# Low-dose ketamine infusions for chronic pain management: Does this qualify as evidence-based practice?

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Harry M Griffiths 

## Abstract

Chronic pain is becoming increasingly prevalent and burdensome both worldwide and in the United Kingdom. Due to the complexity of chronic pain and the therapeutic challenge associated, management is often difficult and requires multidisciplinary care encompassing a combination of pharmacological and non-pharmacological strategies. Conventional analgesic treatments, such as opioids and anticonvulsants, are effective in less than half of chronic pain sufferers and are typically limited to short-term use to prevent complications associated with long-term use such as tolerance and dependence. Consequently, research and clinical interest in alternative management options for chronic pain have increased in recent years, with ketamine being one example under investigation. However, since ketamine has been licensed as an anaesthetic for decades, it has bypassed the traditional scrutinous drug development sequence that is typically seen for therapeutics marketed for pain. As such, data supporting the unlicensed administration of ketamine for chronic pain management is lacking and is being outpaced by the rates of off-label use in pain clinics. Recent limited evidence suggests that ketamine, when given as an intravenous infusion in subanaesthetic doses for refractory pain patients, may provide modest analgesic effects in nearly all aetiologies of chronic pain, with side effects common but typically mild. However, there are concerns over the safety of this practice due to the paucity of robust supportive evidence and the accompanying lack of clinical guidelines or standardised protocols. This review shall summarise the literature examining the use of subanaesthetic-dose ketamine infusions for chronic pain to comment on the current level of evidence, with limitations of existing research and future recommendations discussed.

## Keywords

Pain, chronic pain, pain management, pain postoperative, pain clinics

## Introduction

Chronic pain is exceptionally prevalent and continues to result in significant health, societal, and economic burden worldwide.<sup>1</sup> Due to the complexity of chronic pain perception, to which psychological and social factors contribute, management is often challenging and requires multimodal strategies.<sup>2</sup> Across all aetiologies, it is estimated that conventional analgesic treatments, such as opioids, antidepressants, and antiepileptics, are effective in just 30–40% of chronic pain patients, with the rest suffering inadequate pain control.<sup>3,4</sup> Moreover, these drugs are limited by complications preventing long-term use as evidenced

by the ongoing opioid epidemic in the United States (US), where mortality is fuelled by immoderate opioid prescribing<sup>5</sup>; a public health crisis that, according to recent evidence, the United Kingdom (UK) is at risk of mirroring.<sup>6</sup> Consequently, the need for safe and effective pharmacological alternatives to complement the

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# Low Dose Ketamine Infusion In The Management Of Chronic

**Cyprian Udeagha**



## **Low Dose Ketamine Infusion In The Management Of Chronic:**

The Complete Low Back Pain Toolkit Jeffery J. Rowe, MD, 2023-04-26 This comprehensive guide to low back pain provides readers with an in depth understanding of the causes symptoms and risk factors associated with this common condition With expert insights into anatomy and physiology proper diagnosis and the role of imaging techniques the book offers a solid foundation for those seeking relief from low back pain A wide range of non surgical treatment approaches is explored including physical therapy chiropractic care and massage as well as alternative and complementary therapies like acupuncture yoga and mindfulness The book delves into spinal decompression therapy exercise therapy and manual therapies providing readers with an extensive array of options for conservative care Pain management is a key focus with detailed discussions on medications neuromodulation techniques such as spinal cord stimulation and dorsal root ganglion stimulation and various interventional pain management procedures These include facet joint injections lumbar epidural steroid injections lumbar radiofrequency neurotomy and many others offering the reader an overview of the latest advancements in the field For cases requiring surgical intervention the guide covers minimally invasive surgery techniques providing insights into advanced methods that reduce recovery time Surgical interventions such as lumbar discectomy and spinal fusion are also discussed along with post operative care and rehabilitation strategies Prevention plays a crucial role in maintaining a healthy spine and the book emphasizes the importance of lifestyle factors workplace interventions and proper posture and ergonomics Strategies for managing chronic low back pain as well as prevention and management techniques for athletes are also explored As the field of low back pain research and treatment continues to evolve the book concludes with a look at future directions and innovations This all encompassing guide is an invaluable resource for patients or anyone interested in understanding and effectively managing low back pain With its multidisciplinary approach The Complete Low Back Pain Toolkit A Practical Guide to Finding Your Unique Solution provides readers with the tools and knowledge necessary to make informed decisions and achieve better outcomes

Advanced Therapeutics in Pain Medicine Sahar Swidan, Matthew Bennett, 2020-12-17 Chronic pain places a tremendous burden on both the patient and the healthcare system The use of opioids to address pain has resulted in negative impacts As practitioners work to undo the current opioid crisis options to manage pain need a new approach Advanced Therapeutics in Pain Medicine offers pioneering approaches to this intransigent problem providing a functional medicine approach toward treating pain This book is dedicated to the advancement of non opioid therapeutic options that offer real progress in reaching a future of better pain management With an emphasis on pathophysiology chapters review various types of pain and propose comprehensive treatment plans These include manual therapies novel pharmacologic and plant based approaches hormonal effects on pain pathways as well as psychological and lifestyle interventions Features Written by a multi disciplinary team the book provides clinicians with multiple non opioid treatment considerations Enables practitioners to shift from a one size fits all treatment approach toward

individualized patient care Includes case studies to help educate the provider on how to implement treatment plans in practice Written by a team of physicians pharmacists psychologists and researchers this important book offers a much needed step forward in optimizing pain care and benefits practitioners who care for patients experiencing chronic pain

**Chronic Pain and Addiction** M. R. Clark,G. J. Treisman,2011-04-20 Patients with chronic pain understandably seek relief from their distress and discomfort but many medications that alleviate pain are potentially addictive and most chronic pain conditions only have a temporary response to opiate analgesic drugs This volume reviews the fundamental topics that underlie the complex relationships of this controversial domain The authors review behavioral models and practical methods for understanding and treating chronic pain and addiction including methods to formulate patients with complex comorbidity and screen patients with chronic pain for addictive liability Finally the authors describe the current findings from clinical and basic science that illuminate the role of opiates cannabinoids and ketamine in the treatment of chronic pain Up to date and comprehensive this book is relevant to all professionals engaged in the care of patients with chronic pain or addiction and all others interested in these contemporary issues particularly non clinicians seeking clarity in the controversy over the best approach to patients with chronic pain Arzneimitteltherapie in der Palliativmedizin Constanze Rémi,Claudia

Bausewein,Sarah Charlesworth,Andrew Wilcock,Paul Howard,2021-12-07 Das Buch bietet Ihnen detaillierte Arzneimittelmonografien und praxisorientierte konkrete Handlungsanweisungen mit exakten Dosierungsangaben und zahlreichen Tipps f r die t gliche Praxis Es liefert Ihnen pr zise Informationen zu Sonderf llen wie z B Anwendungen au erhalb der Zulassung Off Label Use alternative Applikationsformen sowie Dosierungsanpassung bei Organinsuffizienz und stellt alternative oder begleitende Medikation vor Das ideale Buch zur kompetenten und sicheren Behandlung von Patienten in der Palliativmedizin Die deutsche Fassung basiert auf dem renommierten englischen Werk Palliative Care Formulary wurde aber auf die Erfordernisse im deutschen Sprachraum angepasst Die 4 Auflage ist nach dem neuesten Wissensstand aus dem PCF7 Palliative Care Formulary 7 aktualisiert um zahlreiche Arzneimittel erg nzt Das Buch eignet sich f r Palliativmediziner innen Fach rzt innen und Weiterbildungsassistent innen Innere Medizin Apotheker innen **Anesthesia for Spine Surgery** Ehab Farag,2012-05-17 A comprehensive guide to anesthesia specifically for spine surgery explaining procedures from the point of view of both anesthesiologists and surgeons *Challenging Cases and Complication Management in Pain Medicine*

Magdalena Anitescu,Honorio T. Benzon,Mark S. Wallace,2017-11-17 This comprehensive book provides reviews of pain management complications that arise in clinical practice Organized into sections focused on types of pain therapy and procedures each chapter is based on actual complications starting with a case description that delineates the context with a short past medical and surgical history pain management technique and outcome it is followed by a comprehensive review of the topic described in the first section Authors emphasize the elements of differential diagnosis that pointed towards establishing of the complication and describe the best way to treat the identified complication Physicians treating pain

patients will be presented the necessary tools in identifying and treating unanticipated complications following pain interventions thus providing safer care for their patients

**Disorders of the Shoulder: Reconstruction** Joseph P Iannotti, Gerald R. Williams (Jr.), Anthony Miniaci, Joseph David Zuckerman, 2013-09-16 Of the nearly 8 million shoulder injuries treated annually in the United States almost half are rotator cuff repairs and most of these injuries are treated by orthopedic sports medicine specialists This title covers the full spectrum of shoulder procedures including open and arthroscopic procedures

**Clinical Pain Management : Chronic Pain** Peter Wilson, Paul Watson, Jennifer Haythornwaite, Troels Jensen, 2008-09-26 The second edition of Chronic Pain now covers a vast scientific and clinical arena with the scientific background and therapeutic options much expanded In common with the other titles comprising Clinical Pain Management the volume gathers together the available evidence based information in a reader friendly format without unnecessary detail

an **Acute Pain Management** Raymond S. Sinatra, 2009-04-27 This textbook is written as a comprehensive overview of acute pain management It is designed to guide clinicians through an impressive array of different options available to them and to patients In the last decade there has been a flurry of interest in the extent to which acute pain can become chronic pain and how we might reduce the incidence of such chronicity This overview covers a wide range of treatments for pain management including the anatomy of pain pathways the pathophysiology of severe pain pain assessment therapeutic guidelines analgesic options organization of pain services and the role of anesthesiologists surgeons pharmacists and nurses in providing optimal care It also discusses the use of patient controlled analgesia and how this may or may not be effective and useful

**Practical Management of Pain E-Book** Honorio Benzon, James P. Rathmell, Christopher L. Wu, Dennis Turk, Charles E. Argoff, Robert W Hurley, 2013-09-11 Obtain all the core knowledge in pain management you need from one of the most trusted resources in the field The new edition of Practical Management of Pain gives you completely updated multidisciplinary overview of every aspect of pain medicine including evaluation diagnosis of pain syndromes rationales for management treatment modalities and much more It is all the expert guidance necessary to offer your patients the best possible relief Consult this title on your favorite e reader conduct rapid searches and adjust font sizes for optimal readability Access up to the minute knowledge on all aspects of pain management from general principles to specific management techniques with contributions from renowned pain management experts Understand and apply the latest developments in pain management with brand new chapters covering disability assessment central post stroke pain widespread chronic pain and burn pain Effectively ease your patients pain with today s best management techniques including joint injections ultrasound guided therapies and new pharmacologic agents such as topical analgesics

**Arzneimitteltherapie in der Palliativmedizin** Claudia Bausewein, Constanze Rémi, Robert Twycross, Andrew Wilcock, Paul Howard, 2018-10-30 Dieses Werk bietet praxisorientierte konkrete Handlungsanweisungen mit exakten Dosierungsangaben und zahlreichen Tipps für die gleiche Praxis Es liefert präzise Informationen zu Sonderfällen wie z B Anwendungen außerhalb der Zulassung off label use

alternative Applikationsformen sowie Dosierungsanpassung bei Organinsuffizienz Das ideale Buch zur kompetenten und sicheren Behandlung von Patienten in der Palliativmedizin Die deutsche Fassung basiert auf dem renommierten englischen Werk Palliative Care Formulary wurde aber auf die Erfordernisse im deutschen Sprachraum angepasst Neu in der 3 Auflage Aktualisiert und auf Stand des englischen PCF6 gebracht Die S3 Leitlinie Palliativmedizin für Patienten mit einer nicht heilbaren Krebserkrankung wurde ergänzt Weitere relevante deutsche Leitlinien berücksichtigt

**Complications in Anesthesia E-Book** Lee A. Fleisher, Stanley H. Rosenbaum, 2017-09-29 Using a unique problem solving approach Complications in Anesthesia 3rd Edition walks you through effective solutions to common complications in anesthesia and critical care This practical reference uses a highly structured clearly illustrated format to bring you up to date with what's new in the field help you anticipate potential challenges and guide you through life saving solutions Presents content in an updated logical organization covering various types of complications drugs testing intubation line insertion surgical procedures etc followed by differential diagnosis and treatment of signs of complications intraoperative such as hypoxia or hypotension and postoperative such as MI Follows a problem based practice oriented approach throughout case synopses are followed by concise coverage of recognition risk assessment implications management and prevention Allows you to review the case reports contemplate the implications then check your response against what the experts have to say Includes numerous photographs diagrams flow charts and tables that illustrate key concepts Ideal as a clinical reference and as a study tool when preparing for oral boards Brings you up to date with new safety standards and the latest ASA guidelines Expert Consult™ eBook version included with purchase This enhanced eBook experience allows you to search all of the text figures and references from the book on a variety of devices

**Pain Management** Magdalena Anitescu, 2018 Pain Management A Problem Based Learning Approach combines comprehensive didactics on pain management topics with board like questions grouped in real time pain practice exams It is uniquely designed to maximize the retaining of learned information by the long life learner in the ABA certification recertification process It is also ideally used as a reference compendium offering theoretical and practical advice to the busy pain practitioner

*Fundamentals of Pain Medicine* Jianguo Cheng, Richard W. Rosenquist, 2018-02-08 Characterized by clarity and straddling the line between scope and depth of information this concise book provides physicians a comprehensive overview of pain medicine Chapters are written by some of the leading minds in pain medicine and feature case studies key points and suggested readings Multidisciplinary approaches to the clinical and financial challenges of pain with the goal of improving patient quality of life are also discussed Additionally the book is in tight alignment with the information that trainees are expected to master for the American Board of Anesthesiology's pain medicine subspecialty certification as outlined by the Joint Council on Anesthesiology Examinations it covers the diagnosis of pain states the management of pain acute pain radicular pain neuropathic pain chronic visceral pain headaches and special populations This book is a must have for anyone new to pain medicine or

studying for the subspecialty certification      Pain Management E-Book Steven D. Waldman, 2011-06-09 Regarded as the premiere clinical reference in its field Pain Management 2nd Edition edited by noted pain authority Dr Steven Waldman provides comprehensive practical highly visual guidance to help you effectively apply the most recent evidence based advances in pain management This popular text has been updated with 13 new chapters that include the latest information on interventional and ultrasound guided techniques acute regional pain nerve blocks and more A user friendly format with lavish illustrations enables you to access trusted guidance quickly and apply the information easily to bring effective pain relief to your patients Tap into the experience of the book's editor Dr Steven D Waldman author of numerous groundbreaking pain management references and a diverse collection of leading international experts many of whom are new to this edition Effectively diagnose and manage any type of pain by implementing the latest evidence based approaches including interventional and ultrasound guided techniques and acute regional pain nerve blocks Keep up with the most essential and latest topics with fully revised chapters and 13 new chapters that include information on central pain modulation ultrasound guided procedures myelopathy and more Find the critical answers you need quickly and easily thanks to a templated format with all content solely reviewed by Dr Waldman to insure consistency throughout Make more accurate diagnoses and perform nerve blocks successfully with unmatched guidance from 1100 full color large scale illustrations      **Total Intravenous Anesthesia and Target Controlled Infusions** Anthony R. Absalom, Keira P. Mason, 2017-03-01 This is a comprehensive and authoritative presentation of total intravenous anesthesia TIVA and target controlled infusion TCI The editors international reputation has enabled them to recruit leading experts from around the world to write single author chapters in their area of expertise Total Intravenous Anesthesia and Target Controlled Infusions is the first multi disciplinary globally authored volume on the topic Providing a single source of information on all aspects of TIVA and TCI from pharmacologic modeling and the pharmacology of intravenous anesthetic drugs to practical considerations in the clinical setting and the requirements of special populations Total Intravenous Anesthesia and Target Controlled Infusions examines the debate about the risks and advantages of TIVA analyze outcome studies and provides guidance on creating a curriculum to teach TIVA and TCI      Textbook of Palliative Medicine Eduardo Bruera, Irene Higginson, Charles F von Gunten, 2009-01-30 Textbook of Palliative Medicine provides an alternative truly international approach to this rapidly growing specialty This textbook fills a niche with its evidence based multi professional approach and global perspective ensured by the international team of editors and contributing authors In the absence of an international curriculum for the study of palliative medicine this textbook provides essential guidance for those both embarking upon a career in palliative medicine or already established in the field and the structure and content have been constructed very much with this in mind With an emphasis on providing a service anywhere in the world including the important issue of palliative care in the developing nations Textbook of Palliative Medicine offers a genuine alternative to the narrative approach of its competitors and is an ideal

complement to them It is essential reading for all palliative care physicians in training and in practice as well as palliative care nurses and other health professionals in the palliative care team      Neuropathic Pain Cyprian Udeagha,2012-03-28 Neuropathic pain is known to be pain with nerve involvement The intensity of which depends on the severity pain threshold and the ability of suffers to cope Neuropathic pain may need mono therapy or combination of therapies to be resolved Neuropathic pain may not resolve completely therefore patient s compliance and understanding is essential in its management Awareness and patient s education on targets may be of help during therapies for neuropathic pain All chapters treated introduction characteristics diagnosis and randomized interventions to certain management of neuropathic pain We acknowledge all those involve in the making of this book      **Cumulated Index Medicus** ,1997      *Complex Regional Pain Syndrome* Jijun Xu,Lynn R. Webster,2025-03-30 Complex Regional Pain Syndrome CRPS is a debilitating and difficult to treat condition characterized by excess and prolonged pain and inflammation Although CRPS can occur anywhere in the body following an injury or other medical event it usually affects an arm leg hand or foot Our understanding of this condition is evolving rapidly but treatment of CRPS requires skillful assessment and up to date knowledge Part of the What Do I Do Now Pain Medicine series Complex Regional Pain Syndrome presents 11 high yield clinical cases to cover a broad spectrum of CRPS including epidemiology diagnosis differential diagnoses pathophysiology conventional and interventional management choices of neuromodulation ketamine infusion spread and prevention CRPS in pediatric patients and adjuvant and emerging therapies This book is an ideal pocket guide for those who are looking for the essentials and advancements needed to manage CRPS



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