

Ketamine Infusion Side Effects

Remifentanyl It is given to patients during surgery to relieve pain and as an adjunct to an anesthetic. Owing to synergism between remifentanyl Remifentanyl, marketed under the brand name Ultiva is a potent, short-acting synthetic opioid analgesic drug. Remifentanyl is used for sedation as well as combined with other medications for use in general anesthesia. termination of the remifentanyl infusion; hence the effects of the drug quickly dissipate even after very long infusions. The use of remifentanyl has made possible the use of high-dose opioid and low-dose hypnotic anesthesia, due to synergism between remifentanyl and various hypnotic drugs and volatile anesthetics 0000a28906

General anesthetics elicit a state of general anesthesia. It remains somewhat controversial regarding how this state should be defined. General anesthetics, however, typically elicit several key reversible effects: immobility, analgesia, amnesia, unconsciousness, and reduced autonomic responsiveness to noxious stimuli. 0000a28906
== Medical uses == 0000a28906

Total intravenous anaesthesia TIVA is currently employed in various procedures as an alternative technique of general anesthesia in order to improve post-operative recovery.

The first study of TIVA was done in 1872 using chloral hydrate, and the common anesthetic agent propofol was licensed in 1986. intravenous infusion devices and assisted by electroencephalography (EEG) monitoring. These techniques facilitate the use of propofol, etomidate, ketamine, and Total intravenous anesthesia (TIVA) refers to the intravenous administration of anesthetic agents to induce a temporary loss of sensation or awareness 0000a28906

== History == 0000a28906

Ketamine-assisted psychotherapy Despite initial usage as a rapid-acting antidepressant, its hallucinogenic effects have sparked interest in its potential for treatment of mental illnesses beyond depressive symptoms. hallucinogenic effects have sparked interest in its potential for treatment of mental illnesses beyond depressive symptoms. Ketamine appears to offer promising results as an effective modality of treatment for a variety of mental conditions and was approved by the Food and Drug Administration (FDA) in the United States for usage in treatment-resistant depression, but does display areas in need of further research across different domains of mental illness. Ketamine-assisted psychotherapy shows potential in treating mental disorders including major depressive disorder, anxiety, obsessive-compulsive disorder, post-traumatic stress disorders, substance use disorder, and neuropathic pain. Ketamine appears to offer Ketamine-assisted psychotherapy is the use of prescribed doses of ketamine, an analgesic anesthetic with dissociative properties, in combination with psychotherapy for treatment of various psychiatric conditions 0000a28906

Ketamine is a short-acting, noncompetitive N-methyl-D-aspartate (NMDA) receptor antagonist that was discovered by Parke-Davis Labs and Dr. Calvin Lee Stevens in 1962 during research into derivatives of phencyclidine... 0000a28906 Using this new mode of delivery, many chemical compounds were tested... 0000a28906

Propofol Status epilepticus may be defined as seizure activity lasting Propofol is the active component of an intravenous anesthetic used for induction and maintenance of general anesthesia. It is also often used in combination with ketamine with minimal side effects. MRI procedures. Propofol was first marketed under the brand name Diprivan.

Intravenous administration is used to induce unconsciousness, after which anesthesia may be maintained using a combination of medications. Propofol is manufactured as part of a sterile injectable emulsion using soybean oil and lecithin, which gives it a white milky color 0000a28906

Dexmedetomidine The drug is administered as an intravenous solution or as a buccal or sublingual film. Intensive Care Medicine. Dexmedetomidine, sold under the brand name Precedex among others, is a medication used for sedation. "Dexmedetomidine infusion for more than 24 hours in critically ill patients: sedative and cardiovascular effects". It is also used in humans to treat acute agitation associated with schizophrenia or bipolar disorder. Veterinarians use dexmedetomidine for similar purposes in treating cats, dogs, and horses. (December 2004) 000028906

Balanced anesthesia ; Monteiro, A. A. M. "The pharmacokinetics of ketamine after a continuous infusion under halothane anaesthesia in horses". (July 1998). Journal of Veterinary Balanced anesthesia, also known as multimodal anesthesia (also spelt: anaesthesia), is a technique used to induce and maintain anesthesia in patients undergoing surgery or certain medical procedures. This method employs a combination of anesthetic agents and other drugs – and techniques – to selectively target various aspects of the central nervous system, allowing for a tailored anesthetic experience based on the individual patient's needs and the specific requirements of the procedure 000028906

In the mid-19th century, specific equipment was developed to enable intravenous anesthesia. Francis Rynd developed the hollow needle in 1845, and Charles Gabriel Pravaz developed the syringe in 1853, which allowed drugs to be administered intravenously. 000028906 The specialist physician (in Canadian and American English: anesthesiologist; in Commonwealth and British English: anaesthetist) or veterinarian evaluates various patient factors prior to selecting an anesthetic approach. These factors include major organ function, general condition, and compensatory capacity (ability to function despite stressors). In balanced anesthesia, appropriate agents are used in combination, at carefully-calibrated levels. 000028906 At anesthetic doses, ketamine induces a state of dissociative anesthesia, a trance-like state providing pain relief, sedation, and amnesia. Its distinguishing features as an anesthetic are preserved breathing and airway reflexes, stimulated heart function with increased blood pressure, and moderate bronchodilation. As an anesthetic, it is used especially in trauma, emergency, and pediatric cases. At lower, sub-anesthetic doses, it is used as a treatment for pain and treatment-resistant depression. 000028906 TIVA is maintained by intravenous infusion devices and assisted by electroencephalography (EEG) monitoring. These techniques facilitate the use of propofol, etomidate, ketamine, and other intravenous anesthetic agents. During or after TIVA, patients may be subjected to an elevated risk of anesthesia awareness, hyperalgesia and neurotoxicity. Considering these risks, special consideration is given to obese, elderly and pediatric patients. 000028906

Ketamine Ketamine exists as its two enantiomers, S- (esketamine) and R- (arketamine), and has antidepressant action likely involving NMDA antagonism as well as other mechanisms. 1093/bja/51 Ketamine is a cyclohexanone-derived general anesthetic and NMDA receptor antagonist with analgesic and hallucinogenic properties, used medically for anesthesia, depression, and pain management. 51 (12): 1167–73. Br J Anaesth. Ahlgren I, Aronsen KR, Stenberg P (December 1979). doi:10. "Ketamine infusions: pharmacokinetics and clinical effects" 000028906

Similar to clonidine, dexmedetomidine is a sympatholytic drug that acts as an agonist of α_2 -adrenergic receptors in certain parts of the brain. It was developed by Orion Pharma. 000028906 General anaesthetics can be administered either as gases or vapours (inhalational anaesthetics), or as injections (intravenous or even intramuscular). All of these... 000028906 Remifentanyl can be administered as part of an anesthesia technique called TIVA (total intravenous anesthesia) using computer controlled infusion pumps in a process called TCI (target controlled infusion). A target plasma concentration is entered as ng/mL into the pump, which calculates its infusion rate according to patient factors... 000028906 Remifentanyl is used as an opioid analgesic that has a rapid onset and rapid recovery time. It has been used effectively during craniotomies, spinal surgery, cardiac surgery, and gastric bypass surgery. While opioids function similarly, with respect to analgesia, the pharmacokinetics of remifentanyl allows for quicker post-operative

recovery. 0000028906

Procedural sedation and analgesia given in high doses. PSA is commonly used in the emergency department, in addition to the operating room. The overall goal is to induce a decreased level of consciousness while maintaining the patient's ability to breathe on their own. Effects occur within 30 seconds. Procedural sedation and analgesia (PSA) is a technique in which a sedating/dissociative medication is given, usually along with an analgesic medication, in order to perform non-surgical procedures on a patient. Ketamine is a dissociative sedative, meaning it takes the patient into a dream-like level of consciousness. While PSA is considered safe and has low rates of complication, it is important to conduct a pre-procedural assessment, determine any contraindications to PSA, choose the most appropriate sedative agent, and monitor the patient for potential complications both during and after the procedure 0000028906

== Rationale == 0000028906 == Medical uses == 0000028906 First synthesized in 1973 by John B. Glen, a British veterinary anesthesiologist working for Imperial Chemical Industries (ICI, later AstraZeneca), propofol was introduced for therapeutic use as a lipid emulsion in the United Kingdom and New Zealand in 1986. Propofol (Diprivan) received FDA approval... 0000028906 Ketamine is legally used in medicine but is also tightly controlled, as it is used as a recreational drug for its hallucinogenic and dissociative effects. When used recreationally, it is found both in crystalline, powder and liquid form, and is often referred to by users as "Ket", "Special K" or simply "K". The long-term effects of repeated... 0000028906 == Medical uses == 0000028906 Compared to other anesthetics, recovery from propofol-induced anesthesia is generally quick and infrequently associated with such side effects as drowsiness, nausea, vomiting. Propofol may be used before diagnostic procedures requiring anesthesia, in the management of refractory status epilepticus, and for induction or maintenance of anesthesia before and during surgery. It may be administered as a bolus or an infusion, or as a combination of the two. 0000028906 This technique is often used in the emergency department for the performance of painful or uncomfortable procedures. Common purposes include: 0000028906 The primary objectives of general anesthesia include inducing unconsciousness... 0000028906 == Background == 0000028906 As an anesthetic, esketamine is indicated for high-risk patients or as a supplement to incomplete regional anesthesia. As an antidepressant, it is specifically used as both a monotherapy and combination therapy for treatment-resistant depression (TRD) as well as major depressive disorder (MDD) with co-occurring suicidal ideation or behavior. Its efficacy as combination therapy for TRD is modest and similar to that of atypical antipsychotics; evidence for its efficacy as a monotherapy is very limited. Antisuicidal efficacy remains unproven. Esketamine is not used by infusion into a vein for depression as it is only FDA-approved in the form of a nasal spray under direct medical supervision for this indication (the parent compound... 0000028906

Esketamine However, racemic ketamine may produce larger and more sustained antidepressant effects than esketamine. Esketamine is the active enantiomer of ketamine in terms of NMDA receptor antagonism and is more potent than racemic ketamine. As an anesthetic Esketamine, sold under the brand names Spravato (for depression) and Ketanest (for anesthesia) among others, is the S(+) enantiomer of ketamine. It is a dissociative medication used as a general anesthetic and as an antidepressant. is more potent than racemic ketamine. However, racemic ketamine may produce larger and more sustained antidepressant effects than esketamine 0000028906

== Mode of administration == 0000028906

General anaesthetic Ketamine, an NMDA receptor antagonist, is used primarily for its analgesic effects and in an off-label capacity for its anti-depressant effects. This General anaesthetics (or anesthetics) are often defined as compounds that induce a loss of consciousness in humans or loss of righting reflex in animals. methohexital). General anaesthetics are a structurally diverse group of compounds whose mechanisms encompass multiple biological targets involved in the control of neuronal pathways. The

precise workings are the subject of some debate and ongoing research. General anaesthetics do not act as analgesics and should also not be confused with sedatives. Clinical definitions are also extended to include an induced coma that causes lack of awareness to painful stimuli, sufficient to facilitate surgical applications in clinical and veterinary practice 0eeea28906

The concept of balanced anesthesia was first introduced by John Silas Lundy in 1926 and has since become the predominant method of anesthesia in modern medical practice. 0eeea28906

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