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Does lidocaine show up on a drug test

Norwegian Institute of Public Health WHO Collaborating Centre for Drug Statistics Methodology Postal address: Postboks 222, Skøyen 0213 Oslo, Norway Visiting/delivery address: Myrens verksted 6H, 0473 Oslo, Norway Tel: +47 21 07 81 60 E-mail: This group comprises substances used for the treatment of cardiovascular conditions. Drugs used for hypertension are classified in: - C02 - Antihypertensives - C03 - Diuretics - C07 - Beta blocking agents - C08 - Calcium channel blockers - C09 - Agents acting on the renin-angiotensin system For combination products of antihypertensives from different ATC groups, follow this ranking from higher to lower precedence: - C09, C07, C08, and C03. This group comprises preparations used in the treatment of arrhythmias. Agents are listed according to the Vaughan Williams classification of antiarrhythmics. Class I antiarrhythmics may vary based on the literature used. The 3rd ed. Of Averys "Drug Treatment" (1987) and "Drugs" 31, 93 - 95, 1986 are used as a basis for ATC classification. See C07 for Class II antiarrhythmics and C08 for Class IV. Adenosine is classified in C01EB. Combined preparations are classified at separate levels using the corresponding 50-series or 70-series. Lidocaine, also known as lignocaine, is a local anesthetic that belongs to the amino amide type. It has various applications, including treating ventricular tachycardia and ventricular fibrillation. When used for local anesthesia or nerve blocks, lidocaine starts working within several minutes and lasts between 30 minutes to three hours. In addition, it can be applied directly to the skin or mucous membranes to numb the area. Lidocaine is often mixed with a small amount of adrenaline (epinephrine) to prolong its local effects and reduce bleeding. However, injecting it intravenously can cause side effects such as confusion, changes in vision, numbness, tingling, and vomiting. It may also lead to low blood pressure and an irregular heart rate. The use of lidocaine has raised concerns about potential problems with cartilage when injected into a joint. Nevertheless, it appears to be generally safe for use during pregnancy and can be used in those allergic to tetracaine or benzocaine. A lower dose may be required in individuals with liver problems. Lidocaine is classified as an antiarrhythmic medication of the class Ib type, which works by blocking sodium channels, thereby decreasing the rate of heart contractions. When injected near nerves, it prevents nerve signals from being conducted to or from the brain. The World Health Organization has listed lidocaine on its List of Essential Medicines. It is available as a generic medication and was the 262nd most commonly prescribed drug in the United States in 2022, with over 1 million prescriptions. The efficacy profile of lidocaine includes a rapid onset of action and intermediate duration of efficacy, making it suitable for various applications, including infiltration, block, and surface anesthesia. Lidocaine is one of the most widely used local anesthetics in dentistry and can be administered through multiple methods, depending on the treatment being performed. It has been preferred over longer-acting substances like bupivacaine due to its rapid onset of action. Lidocaine is used topically on the eyes for short ophthalmic procedures and has shown promise for neuropathic pain and skin graft donor site pain. It is also employed as a local numbing agent to treat premature ejaculation. A transdermal patch approved by the US FDA reduces nerve pain caused by shingles, while it's also used to manage pain from other causes like compressed nerves and post-surgical pain. Lidocaine is commonly used intravenously for treating ventricular arrhythmias during acute myocardial infarction or cardiac catheterization. However, a routine preventive dose after a myocardial infarction is no longer recommended due to lack of convincing benefits. Intravenous lidocaine infusions are also used to treat chronic pain and acute surgical pain, although the quality of evidence for this use is poor. Inhaled lidocaine can be used as a cough suppressor and may help in treating jellyfish stings by numbing the affected area. Lidocaine has been found effective in reducing pain during cystoscopic procedures and may aid in treating gastritis by providing relief from pain. Additionally, it has shown promise in improving premature ejaculation when applied topically before sexual intercourse. Given text here Given article text: around the mouth (circumoral paraesthesia), headache, hyperesthesia, tremor, dizziness, pupillary changes, psychosis, euphoria, hallucinations, and seizures CNS depression with increasingly heavier exposure: drowsiness, lethargy, slurred speech, hypoesthesia, confusion, disorientation, loss of consciousness, respiratory depression and apnoea. Cardiovascular: hypotension, bradycardia, arrhythmias, flushing, venous insufficiency, increased defibrillator threshold, edema, and/or cardiac arrest – some of which may be due to hypoxemia secondary to respiratory depression.[32] Respiratory: bronchospasm, dyspnea, respiratory depression or arrest Gastrointestinal: metallic taste, nausea, vomiting, agita, and diarrhea Ears: tinnitus Eyes: local burning, conjunctival hyperemia, corneal epithelial changes/ulceration, diplopia, visual changes (opacification) Skin: itching, depigmentation, rash, urticaria, edema, angioedema, bruising, inflammation of the vein at the injection site, irritation of the skin when applied topically Blood: methemoglobinemia Allergy ADRs associated with the use of intravenous lidocaine are similar to the toxic effects of systemic exposure above. These are dose-related and more frequent at high infusion rates (≥3 mg/min). Common ADRs include headache, dizziness, drowsiness, confusion, visual disturbances, tinnitus, tremor, and/or paraesthesia. Infrequent ADRs associated with the use of lidocaine include: hypotension, bradycardia, arrhythmias, cardiac arrest, muscle twitching, seizures, coma, and/or respiratory depression.[32] It is generally safe to use lidocaine with vasoconstrictors such as adrenaline, including in regions such as the nose, ears, fingers, and toes.[33] While concerns of tissue death, if used in these areas, have been raised, the evidence does not support these concerns.[33] The use of lidocaine for spinal anesthesia may lead to an increased risk of transient neurological symptoms, a painful condition that is sometimes experienced immediately after surgery.[34] There is some weak evidence to suggest that the use of alternative anesthetic medications such as prilocaine, procaine, bupivacaine, ropivacaine, or levobupivacaine may decrease the risk of a person developing transient neurological symptoms.[34] Low-quality evidence suggests that 2-chloroprocaine and mepivacaine when used for spinal anesthetic have a similar risk of the person developing transient neurological symptoms as lidocaine.[34] Any drugs that are also ligands of CYP3A4 and CYP1A2 can potentially increase serum levels and potential for toxicity or decrease serum levels and the efficacy, depending on whether they induce or inhibit the enzymes, respectively. Drugs that may increase the chance of methemoglobinemia should also be considered carefully. Dronedarone and liposomal morphine are both absolutely a contraindication, as they may increase the serum levels, but hundreds of other drugs require monitoring for interaction.[35] Absolute contraindications for the use of lidocaine include: Heart block, second or third degree (without pacemaker) Severe sinoatrial block (without pacemaker) Serious adverse drug reaction to lidocaine or amide local anesthetics Hypersensitivity to corn and corn-related Lidocaine is contraindicated in patients with certain medical conditions, including Hypotension not due to arrhythmia and Bradycardia. Additionally, individuals with Ehlers–Danlos syndromes and Pseudocholinesterase deficiency may experience reduced efficacy of local anesthetics. It is also crucial to exercise caution in people with liver function impairment, as repeated administration of lidocaine can lead to adverse reactions. In fact, impaired liver function may increase the risk of neurological symptoms such as dizziness, nausea, and seizures. Furthermore, lidocaine should be used with caution in patients with certain cardiac conditions, including Wolff–Parkinson–White syndrome, and Adams–Stokes syndrome. Lidocaine viscous is not recommended for treating teething pain in children and infants, as it can cause adverse reactions. In the event of an overdose, it is essential to seek medical attention immediately. The maximum safe dose of lidocaine is 3 mg per kg, and overdoses can lead to severe toxicity or death. Symptoms of local anesthetic systemic toxicity include numbness of the tongue, dizziness, tinnitus, visual disturbances, convulsions, reduced consciousness progressing to coma, as well as respiratory arrest and cardiovascular disturbances. Treatment with intravenous lipid emulsions is becoming increasingly common in cases of lidocaine overdose. It is also essential to note that lidocaine can be toxic to cartilage and intra-articular infusions can lead to postarthroscopic glenohumeral chondrolysis. Lidocaine works by blocking sodium channels in the heart's conduction system and muscle cells, which raises the threshold for depolarization and makes arrhythmias less likely. As an injectable, it typically starts working within four minutes and lasts for 30 minutes to three hours. The liver metabolizes lidocaine into active metabolites, including monoethylglycinexylidide, which has a longer half-life but is less potent. Lidocaine's distribution volume ranges from 1.1 to 2.1 L/kg, and about 60-80% of it binds to alpha1 acid glycoprotein. Its oral bioavailability is 35%, while topical bioavailability is 3%. Inflammation can reduce lidocaine's efficacy due to competing mediators. The elimination half-life is biphasic, lasting around 90-120 minutes in most people, but can be prolonged in those with liver impairment or congestive heart failure. Lidocaine is excreted in the urine, with 90% as metabolites and 10% unchanged. Its molecular structure allows for conformational flexibility, resulting in over 60 possible conformers, which can affect its physicochemical properties. In veterinary medicine, lidocaine is used as a local anesthetic and to treat ventricular arrhythmias, with a rapid onset of action when given by injection, typically within 2-10 minutes. It is commonly used in companion and production animals worldwide and is listed as an essential veterinary medicine by the World Veterinary Association and the World Small Animal Veterinary Association. Lidocaine is a medication with an duration of action ranging from 30-60 minutes.[57] In veterinary species, its metabolism is similar to humans, with rapid liver metabolism producing metabolites like MEGX and GX that still exhibit partial activity on sodium channels.[57] These compounds are further metabolized into monoethylglycine and xylidide, which can cause toxicity in animals, particularly affecting the central nervous system (CNS) and cardiovascular system.[57] Toxicity in animals mirrors that seen in humans, with CNS signs appearing first, followed by muscle twitching, hypotension, myocardial depression, and arrhythmias. Higher doses can lead to further CNS depression, seizures, convulsions, and eventually apnea and death.[57] Lidocaine is a key component of the veterinary drug Tributame, used in euthanasia on horses and dogs alongside embutramide and chloroquine.[58][59] Lidocaine was first synthesized in 1943 under the name 'xylocaine' by Swedish chemist Nils Löfgren, with Bengt Lundqvist performing the first injection anesthesia experiments on himself.[60] The medication was initially marketed in 1949 and is now available in various forms, including topical formulations and solutions for injection or infusion.[63] Lidocaine hydrochloride 2% epinephrine 1:80,000 solution for injection in a cartridge Lidocaine hydrochloride 1% solution for injection Topical lidocaine spray 2% viscous lidocaine The provided text appears to be a collection of references and citations related to Lidocaine Hydrochloride, a medication used for various purposes. The information includes summaries of product characteristics, dosage forms, and uses of Lidocaine Hydrochloride. Some specific points mentioned in the text include: * Lidocaine Hydrochloride is available in different formulations, such as injections, patches, and topical solutions. * It is used to treat conditions like local anesthesia, pain, and neuropathic pain. * The medication has been studied for its effectiveness in treating various types of pain, including chronic pain and pain associated with skin grafts. * Lidocaine Hydrochloride has also been investigated for its potential benefits in treating premature ejaculation and preventing myocardial infarction. The text cites a range of sources, including medical journals, online databases, and books. These sources provide information on the pharmacology, clinical uses, and safety profiles of Lidocaine Hydrochloride. Overall, the text appears to be a comprehensive collection of information on Lidocaine Hydrochloride, highlighting its various applications and potential benefits. Pharmacological treatment of neonatal seizures and pain management with lidocaine. Lidocaine has been investigated for its potential to suppress cough during bronchoscopy and reduce pain during flexible cystoscopy. Animal studies suggest that lidocaine has an antitussive effect, while human studies have shown its efficacy in reducing postoperative pain and recovery time. Lidocaine is also used to treat premature ejaculation and has been found to be effective in this regard. The pharmacological properties of lidocaine were examined through various studies published between 2001 and 2019. A meta-analysis conducted by the Cochrane Database of Systematic Reviews in 2019 highlighted the efficacy of lidocaine as a local anesthetic. However, it was noted that lidocaine can be porphyrinogenic in certain individuals, particularly those with Ehlers-Danlos Syndromes, which may lead to resistance to local anesthesia. Lidocaine's safety profile was also scrutinized by the FDA Center for Drug Evaluation and Research (CDER), which recommended against using it to treat teething pain due to concerns about its potential toxicity. Furthermore, studies have demonstrated that lidocaine can cause cardiac arrhythmias and systemic toxicity if not used properly. Research has suggested that lidocaine's mechanism of action involves the shortening of action potential duration and reduction of intracellular sodium, leading to a negative inotropic effect on the heart. The Norwegian Porphyria Centre and the Swedish Porphyria Centre have acknowledged the potential for lidocaine-induced porphyrinogenicity, but also noted that strong clinical evidence points to its probable non-porphyrinogenic nature. In terms of local anesthetic systemic toxicity (LAST), studies have proposed various treatment options, including lipid rescue therapy. The Journal of Dental Anesthesia and Pain Medicine published a study in 2019 highlighting the incidence of LAST in patients with Ehlers-Danlos Syndromes undergoing dental surgery. The article discusses various aspects of lidocaine, a local anesthetic used to treat pain and arrhythmias. The first section mentions several research studies on lidocaine's pharmacokinetics in different populations, such as individuals with advanced heart failure, liver disease, or renal failure. The next sections explore lidocaine's conformational equilibria in supercritical carbon dioxide, which can affect its pressure-dependent properties. Additionally, the article touches on the production of lidocaine nanoforms via rapid extension of a supercritical solution into water medium. Other topics include: * The 2023 World Small Animal Veterinary Association (WSAVA) list of essential medicines for cats and dogs, where lidocaine is listed as an essential medication. * Veterinary Pharmacology and Therapeutics, which provides information on lidocaine's uses in veterinary medicine. * A summary of the FDA Freedom of Information Summary - Tributame, which discusses the history of lidocaine. * Historical studies on local anesthetics, including Löfgren's 1948 dissertation on Xylocaine (a brand name for lidocaine). * An article by Wildsmith (2011) that highlights the complexities of lidocaine's chemistry. * A list of international forms and names for lidocaine from Drugs.com. * Information on updating medicine ingredient names, including a list of affected ingredients. * The 2021 Prohibited List International Standard, where lidocaine is listed as an acceptable substance. Please note that the original text contains references to specific studies, articles, and sources, which I have omitted in this paraphrased version. Retrieved 18 May 2021. ^ "New York Drug Threat Assessment" was published by National Drug Intelligence Center in November 2002, archived from the original on 12 August 2012. ^ A study published in Polimery W Medycynie found that synthol is used in bodybuilding, referencing usage in 2009 and assigned PMID 19580174. ^ Bernardo NP et al. investigated caffeine and other adulterants in street cocaine seizures in Brazil, published in International Journal of Drug Policy in 2003, doi:10.1016/S0955-3959(03)00083-5. ^ The UNITED STATES of America v. Luis A. CUELLO case was decided by the United States Court of Appeals, Fifth Circuit on 25 July 1979, archived from the original on 24 May 2012. ^ D Winterman reported on cutting drugs becoming big business in a BBC News Online article published on 7 September 2010 and archived from the original on 2 February 2017. ^ The United States Pharmacopeial Convention released Revision Bulletin: Lidocaine and Prilocaine Cream–Revision to Related Compounds Test on 30 November 2007, archived from the original on 1 May 2013. ^ MedlinePlus featured "Lidocaine Transdermal Patch" in their database, referencing US patent 2441498 issued on 11 May 1948. Metazachlor synthesis involves various precursors, including xylidines such as 2,6-Xylidine, which is an organic compound with the formula C8H11N. This compound is a colorless liquid and has a melting point of 11.45 °C and boiling point of 215 °C. Commercially significant derivatives of 2,6-Xylidine include anesthetics like lidocaine, bupivacaine, mepivacaine, and etidocaine. The synthesis of metazachlor often involves the use of xylidines as precursors. Specifically, 2,6-Xylidine is a precursor to the fungicide metalaxyl and the herbicide metazachlor itself. In terms of its properties, 2,6-Xylidine has a chemical formula of C8H11N and a molar mass of 121.183 g·mol−1. In addition to its use as a precursor in the synthesis of various compounds, 2,6-Xylidine is also a major metabolite of the drug xylazine in both horses and humans. The compound's chemical structure makes it useful for a range of applications, including the production of NHC ligands and other important chemicals. The chemical compound 2,6-xylidine has been studied and referenced in various publications. According to the Ullmann's Encyclopedia of Industrial Chemistry, a reliable source for industrial chemistry information (SE), xylidine is also mentioned in several other sources, including scientific journals and government reports. For example, a study published in the Journal of Pharmaceutical and Biomedical Analysis (NNES) found that xylidine can be detected in equine urine using GC-MS analysis. Additionally, the Drug Enforcement Administration's report on xylazine (IB) mentions xylidine as one of its metabolites. Furthermore, various researchers have used xylidine as a building block for other compounds. For instance, Hans-Ulrich Blaser and Felix Spindler (1997) employed enantioselective catalysis to produce several agrochemicals, including metalaxyl (SE), which is closely related to xylidine. The chemical synthesis of 2,6-xylidine has been detailed in various sources. Thomas A. Unger's Pesticide Synthesis Handbook provides a comprehensive overview of the synthesis process, highlighting its importance in industrial applications (IB). Lastly, the Wikipedia article on 2,6-Xylidine lists numerous external tools and links to related articles, providing a valuable resource for researchers and scientists interested in this compound. Contact information for Oslo, Norway includes a phone number at +47 21 07 81 60 and an email address.