Alcoholes usos y aplicaciones pdf

You are reading the free preview of page 4 not displayed in this preview. The three alcohols we find most often in everyday life are methanol, ethanol and 2-propanol. All are precursors of other chemicals, have diverse uses and are produced in large quantities. Antiseptics and disinfectants are products that inhibit the growth of microorganisms and destroy them. If they are used on living creatures, they are called antiseptics. There are many substances that can be used to treat wounds, but only the most common ones will be discussed. The most common are ethyl alcohol or ethanol and isopropyl alcohol. Concentrations range from 70 to 96% for the first and between 70 and 100% for the second. Although its applications are identical, ethanol is commonly used because it is the least irritating. It should not be used in open wounds, as it is an irritating product and contributes to the appearance of

blood clots that cover inside living bacteria that are still in the wound. Methyl alcohol, CH3OH Methyl alcohol is also known as methanol, wood alcohol, occurs during the production of liquor in clandetaine until now, which do not guarantee a stable temperature throughout the distillation process, thus generating contaminated liquor (a mixture of ethanol and methanol) that ultimately goes to the consumer. Note that this toxic mixture can also be obtained in the production of homemade alcoholic beverages, such as chicha. In the past it was also derived from dry distillation of wood; but today it comes out on an industrial level as a product of polymer production and is used as a means for removing paint, cleans breezes, anti-frieze, toner, varnishes, varnishes, photographic products, solvents, as well as raw materials for the manufacture of plastics, textiles, drying, explosives, rubber, among other products. This is necessary for the general physician and the community because of the high use of methanol to know the serious risk it poses to health, the effects of this substance due to the high number of deaths and irreparable neurological damage it can cause. Chemical and pharmacokinetic properties. Methanol is a volatile, colorless liquid with a distinctive smell soluble in water, alcohols, ketones, esters and halogenated hydrocarbons; its density is 0.79, melting point - -97oC, boiling point 65oC, steam pressure 125 mmHg. Methanol has a distribution volume of 0.6-0.7 l/kg, has no protein binding, which is why it is a substance that can be dialysed. It has very good absorption in all the ore, dermal and inhalation pathways, the last 2 common in children and industrial workers respectively; gastrointestinal tract is fully digested between 30-90 minutes, time which reaches the maximum concentration of plasma; it has a semi-icing at low doses and without the presence of concomitant ethanol 3 hours or less, while with mild poisoning it is 14-20 hours, with severe increases to 24-30 hours and there are reports of another 52 hours; it is metabolized between 75-85% in the liver, 10-20% is excreted without changes in the lungs and 3% of the kidneys. Methanol methanol is metabolized by enzyme alcohol dehydrogenase, the same one that metabolizes ethanol, but this enzyme is 22 times more afchin ethanol than methanol, so ethanol is used as an antidote to this poisoning, since preferring the enzyme as substrate ethanol we avoid the formation of toxic methanol metabolites , causing symptoms that are formaldehyde and formaldehyde and formal It is important to know that once methanol metabolism on formaldehyde has begun, it is a very reactive product, so it cannot be detected, but not so does the prolapic acid that can be measured in the blood and urine even when the levels of methanol in the blood are negative; elimination of ammonia acid increases in the presence of folic acid, as the latter contributes to the conversion of ultraic acid into carbon dioxide and water, thus avoiding toxicity. Clinical manifestations Clinical manifestations depend on the amount of consumption, the time it takes for the patient to consult and delay at the Institute of Medical Treatment. The toxic dose of methanol has individual variations; for an adult it is 60-250 ml of methanol at 40%, although survival with 500-600 ml was reported and death with only 15 ml. Symptoms start from 40 minutes to 72 hours of wiring depending on the time it takes for toxic metabolites to form and consist of drunkenness, headaches, nausea, vomiting, which mark the onset of much stronger guava than ethanol; abdominal pain is mainly in mesogestria, so pancreatitis should be excluded; tachipnoe, where the prevailing circuit is Kusmaul's breathing as a manifestation of metabolic acidosis; within the symptoms of the eyes, we have decreased visual acuity, midriasis, which does not respond to light, clouding of vision, hyperemia of the optical disk at the bottom of the eye, responsibility, which is possibly the initial symptom of the eyes, diplopia and blindness, there are also myalgias, decreased strength, acute renal failure, depression of the central nervous system, hypotension, bradycardia, circulatory collapse, which is a sign of bad prognognosis; definitively convulsions, coma, and death. Diagnosis Diagnosis is clinical based on high suspicion of drinking alcohol in adultery and presence of eye symptoms, in addition to detection in paraclinic levels of methanol in the blood, olomic acid in both blood and urine, low sodium bicarbonate, metabolic acidosis with hypokalemia to bind potassium to forage acid, which forms potassium feed, high amonium rupture and increased amylase. Ethyl alcohol, CH3CH2OH Chemically, when we talk about alcohol, we mean ethyl alcohol or ethanol, the formula of which is CH3CH2OH. There are other types of alcohol, Which can not be used because of their high toxicity, such as methyl alcohol (green bird, which caused numerous deaths in prisons. Ethyl alcohol is obtained from fermentation of starch and glucose contained in fruits, cereals, honey, sugar troyes and other substances. , chicha and wine; Arab alchemys introduced in Europe the process of distillation of products derived from fermentation, thereby allowing the production of drinks with a higher alcohol content (from 30 to 55o), as in the case of cognac, cognac, pisco, whiskey, etc. The table below shows some alcoholic beverages with their concentrations (degree of alcohol) and equivalence (the amount of drink containing 15 ml of absolute alcohol). Please note that in a small glass with strong 45o alcohol there is the same amount of alcohol as a large glass (shopero) with beer. Where is the use of alcohol? Stage 4 were described in a journey that alcohol takes in our body: Absorption: Because of its low molecular weight, alcohol does not require digestion, but is absorbed directly into its original state through the mucous membrane of the stomach and small intestine. Absorption occurs quickly, able to achieve in some cases the maximum concentration in the blood in just 10-20 minutes, although usually this maximum concentration in the blood comes after 30-60 minutes. The most influenced factor on the rate of absorption is the amount of food found in the stomach at a time when alcohol reaches it. Thus, snacking and other forms of fasting allow you to quickly pass alcohol into the bloodstream, while drinking immediately after a hearty meal (especially if it is high in fat) causes alcohol to reach blood more often, and therefore reaches a lower level of alcohol in the blood. Distribution: Alcohol travels through the blood to all places of the body, easily spreading to cells of different organs and tissues. The amount of alcohol that goes into cells, and therefore its effect on the body, depends on its concentration in the blood or alcohol. Of great importance is the fact that alcohol easily extends to the Central Nervous System, where it exerts the depressive effect of its functions. Metabolization: About 90% of the absorbed alcohol is metabolized in the liver, to the action of enzymes that turn it into acetaldehyde, acetic acid, and finally into carbon dioxide and water. The rate of alcohol detoxification relies heavily on this liver function. It is estimated that in the liver of an adult, a man healthy, 70 kg of weight, can metabolize approximately 15 ml of absolute alcohol per hour. In women, this process is slower and metabolized only from 10 to 12 mL. alcohol per hour. Disposal: 10% of the remaining alcohol is disposed of directly, without conversion, through overdue air and urine. Small amounts are also eliminated by sweating (skin), tears and breast milk. The fact that alcohol is eliminated in this way allowed to develop methods that allow its detection in overdue air, urine and tears, and thus be able to assess quite roughly the level of alcohol. Isopropyl alcohol, CH3CH(CH3)OH Isopropyl alcohol (2-propanol), a common alcohol for friction sold in pharmacies, is antiseptic, even more effective than ethyl alcohol. Isopropyl alcohol is industrially ocated for the production of acetone, an important solvent (and a component of nail polish remover). nails).