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Hydromorphone

(Trade names: Dilaudid[®], Exalgo[®]; Street Names: Dust, Juice, Dillies, Smack, D, Footballs)

Introduction:

Hydromorphone is a potent schedule II opioid analgesic drug. Hydromorphone abuse has been a continuing problem in the United States. It is marketed as injectable ampules, multiple dose vials, tablets and suppositories. Hydromorphone is indicated for relief of moderate-to-severe pain. Hydromorphone is marketed under brand names, Dilaudid[®] and Exalgo[®]. It is also marketed in generic forms.

Licit Uses:

According to IQVIA National Prescription Audit[™], total prescriptions dispensed for hydromorphone in the United States remained fairly stable between 2012 and 2015, averaging approximately 3.82 million per year, before decreasing to approximately 2.23 million in 2020, 2.22 million in 2021, and 2.16 million in 2022.

Currently approved hydromorphone products include tablets of 2, 4, and 8 mg, extended release tablets of 8, 12, 16, 32 mg, oral solution of 5 mg/5 ml viscous liquid, and ampules of 1, 2, 4, and 10 mg/ml sterile solution for parenteral administration. A 3 mg suppository is also available.

Chemistry/Pharmacology:

Hydromorphone (4,5-epoxy-3-hydroxy-17-methylmorphinan-6-one) is a semi-synthetic opioid agonist derived from morphine. It will be positively identified as an opiate in the field test kits. Pharmacological and toxic effects, clinical indications and contraindications, abuse and dependence liabilities of hydromorphone are essentially similar to those of other schedule II opioid analgesics such as morphine, oxycodone, etc. In humans, the doses of 1.3 and 7.5 mg hydromorphone produces analgesia equivalent to that produced by 10 and 30 mg morphine when taken by the intramuscular and oral routes, respectively. The analgesic action of hydromorphone is perceived within 15 and 30 minutes following its administration through injection and oral routes, respectively. The analgesic action usually lasts for more than 5 hours. Similar to other opioids, hydromorphone produces euphoria, feelings of relaxation, reduced anxiety, respiratory depression, sedation, constipation, papillary constriction, and cough suppression. Acute overdose of hydromorphone can produce severe respiratory depression, somnolence progressing to stupor or coma, skeletal muscle flaccidity, cold and clammy skin, constricted pupils, reduction in blood pressure and heart rate, and death. Pure opioid antagonists such as naloxone are specific antidotes against respiratory depression from hydromorphone overdose.

Illicit Uses:

Hydromorphone, similar to other schedule II opioids, has a high abuse and dependence potential and produces tolerance. Prior to the current popularity of hydrocodone and oxycodone among drug abusers, low dose (2 and 4 mg) immediate release hydromorphone formulations (i.e., Dilaudid[®]) were the leading opioid products for abuse and diversion. Abuse of hydromorphone is mainly among rural and suburban populations.

Illicit Distribution:

The main sources of hydromorphone diversion include forged prescriptions, "doctor-shoppers," pharmacists and physicians, armed robberies, robberies of pharmacies and nursing homes. The diversion of Dilaudid[®] has been reported by a number of DEA field offices including Atlanta, Boston, Chicago, Dallas, Detroit, Houston, Los Angeles, New York, San Antonio, St. Louis, and Washington D.C. The street price of a 4 mg tablet of Dilaudid[®], the most common dosage strength reported, has ranged from \$5 to \$100 per tablet depending on the region. According to DEA's National Forensic Laboratory Information System (NFLIS) Drug database, which collects scientifically verified data on drug items and cases submitted to and analyzed by participating federal, state and local forensic laboratories in the United States, there were 1,091 reports of hydromorphone in 2020, 826 reports in 2021, and 533 reports in 2022.

The 2021 National Survey on Drug Use and Health (NSDUH) reported that among people aged 12 and older in the United States, approximately 1.62 million (0.6%) used hydromorphone products in 2021 and approximately 190,000 (0.1%) misused hydromorphone products in 2021.

Control Status:

Hydromorphone is controlled in schedule II of the Controlled Substances Act.

Comments and additional information are welcomed by the Drug and Chemical Evaluation Section; Fax 571-362-4250, Telephone 571-362-3249, or Email DPE@dea.gov.