



AcelRx Pharmaceuticals announces publication analyzing pooled data on sufentanil sublingual tablets for short-term treatment of moderate-to-severe acute pain

Jan 07, 2019

- **Over 800 patients from AcelRx studies supporting DSUVIA™ approval were included in the pooled safety analysis**
- **Initial dosing of 30 mcg sufentanil sublingual tablet calculated as dose-equivalent to 5 mg of IV morphine**

REDWOOD CITY, Calif., Jan. 7, 2019 /PRNewswire/ -- AcelRx Pharmaceuticals, Inc. (Nasdaq: ACRX), (AcelRx), a specialty pharmaceutical company focused on the development and commercialization of innovative therapies for use in medically supervised settings, today announced the publication of a pooled analysis in the peer reviewed journal, *Pain Management*, analyzing the results of AcelRx's clinical studies to assess safety of sufentanil sublingual tablets for the short-term treatment of moderate-to-severe acute pain in medically supervised settings.

The objective of the safety analysis was to evaluate the pooled data from AcelRx's clinical studies of sufentanil sublingual tablets (SSTs) administered at 30 mcg dose equivalents over ≤ 72 hours for moderate-to-severe acute pain management in both postoperative and emergency room patients. Analysis included a subset of patients from SST 15 mcg studies where patients received the first two doses of SST 15 mcg within the first 20–25 min (representing a 30-mcg dose-equivalent). Overall, 804 patients were evaluated in the pooled safety analysis, including 646 that had received the active drug. Across all of the AcelRx studies, adverse events (AEs) were experienced by 60.5% of patients in the SST group, and 61.4% in the placebo group. The most common treatment-related AEs experienced by patients treated with SST were nausea (28.5%), vomiting (6.5%) and headache (5.0%). Findings from the pooled analysis support that short-term (≤ 72 hours) administration of SST is well tolerated, with most adverse events considered mild or moderate in severity.

The publication also noted the additional safety assessment measuring cognitive impairment, which AcelRx had performed in one open-label SST 30 mcg study in emergency room patients (Study SAP302). A total of 75 patients were dosed with SST 30 mcg and evaluated pre-dose and 1 hour post-dose for cognitive impairment using the validated Six-item Screener tool. In 97.3% of the patients, the score stayed the same or improved following a dose of SST 30 mcg.

"In my experience treating emergency trauma and injury patients with DSUVIA, the overall adverse event profile, and lack of cognitive impairment following treatment with DSUVIA, supports the importance of this non-invasive opioid as a well-tolerated treatment option for moderate-to-severe acute pain management in hospitals," said Dr. James Miner, Chief of Emergency Medicine at Hennepin Healthcare and lead investigator in the DSUVIA Emergency Department Study SAP302.

Active-Comparator Study Design and Dosing Equivalence

This safety analysis also evaluated the morphine equivalence of SSTs from 357 patients in AcelRx's active-comparator study evaluating two patient-controlled analgesia (PCA) systems. Within the first 5 hours after initiation of treatment with either SST 15 mcg PCA (20-minute lockout) or IV morphine 1 mg PCA (6-minute lockout), SST 15 mcg was calculated to be dose-equivalent to approximately 2.5 mg IV morphine based on drug utilization in each treatment group over this 5 hour period (or 5 mg IV morphine for 30 mcg SST). Zalviso is not approved in the U.S.

About AcelRx Pharmaceuticals, Inc.

AcelRx Pharmaceuticals, Inc. is a specialty pharmaceutical company focused on the development and commercialization of innovative therapies for use in medically supervised settings. AcelRx's proprietary, non-invasive sublingual formulation technology delivers sufentanil with consistent pharmacokinetic profiles. The Company has one approved product in the U.S., DSUVIA (sufentanil sublingual tablet, 30 mcg), known as DZUVEO in Europe, indicated for the management of acute pain severe enough to require an opioid analgesic for adult patients in certified medically supervised healthcare settings, and one product candidate, Zalviso® (sufentanil sublingual tablet system, SST system, 15 mcg) being developed as an innovatively designed patient-controlled analgesia (PCA) system for reduction of moderate-to-severe acute pain in medically supervised settings. DZUVEO and Zalviso are both approved products in Europe. Zalviso is not approved in the U.S. For additional information about AcelRx, please visit www.acelrx.com.

About DSUVIA (sufentanil) sublingual tablet

Indications and Usage

DSUVIA is indicated for use in adults in a certified medically supervised healthcare setting, such as hospitals, surgical centers, and emergency departments, for the management of acute pain severe enough to require an opioid analgesic and for which alternative treatments are inadequate.

Limitations of Use:

- Not for home use or for use in children. Discontinue treatment with DSUVIA before patients leave the certified medically supervised healthcare setting.
- Not for use for more than 72 hours. The use of DSUVIA beyond 72 hours has not been studied.
- Only to be administered by a healthcare provider.
- Because of the risks of addiction, abuse, and misuse with opioids, even at recommended doses, reserve DSUVIA for use in patients for whom alternative treatment options [e.g., non-opioid analgesics or opioid combination products]:
 - Have not been tolerated, or are not expected to be tolerated
 - Have not provided adequate analgesia, or are not expected to provide adequate analgesia.

PLEASE SEE BELOW FOR THE IMPORTANT SAFETY INFORMATION, INCLUDING BOXED WARNING

IMPORTANT SAFETY INFORMATION

WARNING: ACCIDENTAL EXPOSURE AND DSUVIA REMS PROGRAM; LIFE-THREATENING RESPIRATORY DEPRESSION; ADDICTION, ABUSE, AND MISUSE; CYTOCHROME P450 3A4 INTERACTION; and RISKS FROM CONCOMITANT USE WITH BENZODIAZEPINES OR OTHER CNS DEPRESSANTS

Accidental Exposure and DSUVIA Risk Evaluation and Mitigation Strategy (REMS) Program

Accidental exposure to or ingestion of DSUVIA, especially in children, can result in respiratory depression and death. Because of the potential for life-threatening respiratory depression due to accidental exposure, DSUVIA is only available through a restricted program called the DSUVIA REMS Program.

- **DSUVIA must only be dispensed to patients in a certified medically supervised healthcare setting.**
- **Discontinue use of DSUVIA prior to discharge or transfer from the certified medically supervised healthcare setting.**

Life-Threatening Respiratory Depression

Serious, life-threatening, or fatal respiratory depression may occur with use of DSUVIA. Monitor for respiratory depression, especially during initiation of DSUVIA.

Addiction, Abuse, and Misuse

DSUVIA exposes patients and other users to the risks of opioid addiction, abuse, and misuse, which can lead to overdose and death. Assess each patient's risk prior to prescribing DSUVIA, and monitor all patients regularly for the development of these behaviors or conditions.

Cytochrome P450 3A4 Interaction

The concomitant use of DSUVIA with all cytochrome P450 3A4 inhibitors may result in an increase in sufentanil plasma concentrations, which could increase or prolong adverse drug reactions and may cause potentially fatal respiratory depression. In addition, discontinuation of a concomitantly used cytochrome P450 3A4 inducer may result in an increase in sufentanil plasma concentration. Monitor patients receiving DSUVIA and any CYP3A4 inhibitor or inducer.

Risks From Concomitant Use With Benzodiazepines Or Other CNS Depressants

Concomitant use of opioids with benzodiazepines or other central nervous system (CNS) depressants, including alcohol, may result in profound sedation, respiratory depression, coma, and death.

- **Reserve concomitant prescribing for use in patients for whom alternative treatment options are inadequate.**
- **Limit dosages and durations to the minimum required.**
- **Follow patients for signs and symptoms of respiratory depression and sedation.**

Contraindications

Use of DSUVIA is contraindicated in patients with:

- Significant respiratory depression
- Acute or severe bronchial asthma in an unmonitored setting or in the absence of resuscitative equipment
- Known or suspected gastrointestinal obstruction, including paralytic ileus
- Known hypersensitivity to sufentanil or components of DSUVIA.

Warnings and Precautions

- Accidental ingestion or exposure to even one dose of DSUVIA, especially in children, can result in respiratory depression and death due to an overdose of sufentanil.
- DSUVIA is for use in adult patients only in a certified medically supervised healthcare setting. Use of DSUVIA outside of this setting can increase the risk of accidental exposure in others for whom it is not prescribed, causing fatal respiratory depression. Discontinue use of DSUVIA prior to discharge or transfer from the certified medically supervised healthcare setting. DSUVIA is not for home or pediatric use.
- DSUVIA contains sufentanil, a Schedule II controlled substance. As an opioid, DSUVIA exposes users to the risks of addiction, abuse, and misuse.
- Profound sedation, respiratory depression, coma, and death may result from the concomitant use of DSUVIA with benzodiazepines or other CNS depressants (e.g., non-benzodiazepine sedatives/hypnotics, anxiolytics, tranquilizers, muscle relaxants, general anesthetics, antipsychotics, other opioids, alcohol). Because of these risks, reserve concomitant prescribing of these drugs for use in patients for whom alternative treatment options are inadequate.
- Life-threatening respiratory depression in patients with chronic pulmonary disease or in elderly, cachectic and debilitated patients: monitor patients closely, particularly when initiating DSUVIA therapy and when DSUVIA is used with other drugs that depress respiration. Management of respiratory depression may include close observation, supportive measures, and use of opioid antagonists, depending on the patient's clinical status.
- A potentially life-threatening condition could result from concomitant serotonergic drug administration. Discontinue DSUVIA if serotonin syndrome is suspected. Cases of adrenal insufficiency have been reported with opioid use (usually > 1 month). Presentation and symptoms are non-specific and include nausea, vomiting, anorexia, fatigue, weakness, dizziness and low blood pressure. Confirm diagnosis with testing as soon as possible and, if confirmed, treat with physiologic replacement of corticosteroids and wean patient from opioid.
- As with all opioids, sufentanil may produce bradycardia or hypotension in some patients. Therefore DSUVIA should be used with caution in patients with bradyarrhythmias or hypovolemia.
- DSUVIA should not be used in patients who may be particularly susceptible to the intracranial effects of CO₂ retention, such as those with evidence of increased intracranial pressure, impaired consciousness or coma.
- Prolonged use of DSUVIA during pregnancy can result in withdrawal in the neonate, which can be life-threatening. Observe newborns for signs of neonatal opioid withdrawal syndrome and manage accordingly. Advise pregnant women using opioids for a prolonged period of this risk and ensure that appropriate treatment will be available.
- Insufficient data are available on the use of DSUVIA in patients with severe liver or kidney impairment. DSUVIA should be used with caution in such patients due to the importance of these organs in the metabolism and excretion of sufentanil.

Adverse Reactions

Adverse reactions are described, or described in greater detail, in other sections of the Prescribing Information:

- Life-Threatening Respiratory Depression [see *Warnings and Precautions* (5.3)]
- Addiction, Abuse, and Misuse [see *Warnings and Precautions* (5.4)]
- Adrenal Insufficiency [see *Warnings and Precautions* (5.9)]
- Severe hypotension [see *Warnings and Precautions* (5.10)]
- Gastrointestinal Adverse Reactions [see *Warnings and Precautions* (5.12)]
- Seizures [see *Warnings and Precautions* (5.13)]
- Neonatal Opioid Withdrawal Syndrome [see *Warnings and Precautions* (5.15)]

The most commonly reported adverse reactions ($\geq 2\%$ and higher than placebo) were nausea, headache, vomiting, dizziness, and hypotension.

Medical Information

For medical inquiries or to report an adverse event, other safety-related information or product complaints for a company product, please contact the AcelRx Medical Information Contact Center at 1-855-925-8476 or AcelRxMedInfo@rmpdc.org.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch or call 1-800-FDA-1088.

Please see [full Prescribing Information](#) and [Directions For Use](#).

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SOURCE AcelRx Pharmaceuticals, Inc.

Theresa Dolge, Evoke, 215-928-2748, theresa.dolge@evokegroup.com; Jessica Ross, Evoke, 215-928-2346, jessica.ross@evokegroup.com; Investor Contacts: Raffi Asadorian, CFO, AcelRx, investors@accelrx.com, Brian Korb, Solebury Trout, 646-378-2923, investors@accelrx.com