American Pain Society
RESEARCH
EDUCATION
TREATMENT
ADVOCACY

F. Treatment Approaches (Medical/ Interventional)

F01 Acute Pain – Opioids

(328) Abuse and diversion of immediate-release prescription opioids: 30 months of data from the RADARS® System

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Opioid analgesic diversion and abuse has reached epidemic levels. The Researched Abuse, Diversion, and Addiction-Related Surveillance (RADARS®) System collects product- and geographically-specific data about inappropriate opioid use. Data from the RADARS System Poison Center, Drug Diversion, Opioid Treatment Program, Survey of Key Informants' Patients, and College Survey programs (Jan 2010 – June 2012) were used to measure rates of diversion and abuse for immediate release formulations of hydrocodone, morphine, oxycodone, oxymorphone, and tapentadol. Poison Center program "intentional-abuse" cases were analyzed. Average rates were calculated using population (events per 100,000 persons) and unique recipients of a dispensed drug (events per 1,000 URDD). Population rates estimate the public health burden associated with the abuse or diversion of each drug. URDD rates estimate the risk for individuals by taking into account the number of patients who have had a prescription filled. Negative binomial regression was used to estimate average rates, confidence intervals, and trends over time. Abuse and diversion rates were generally stable over time. On a population basis, hydrocodone had the greatest rates in all programs. Tapentadol had the least population rates in all programs except the Poison Center program, in which the tapentadol and oxymorphone rates were indistinguishable. When compared to the number of patients filling prescriptions (URDD), oxymorphone had the greatest rates in all programs. URDD rates were least for morphine in the Poison Center program, tapentadol in the Drug Diversion program, oxycodone in the Opioid Treatment and Survey of Key Informants' Patients programs, and hydrocodone in the College Survey program. Population-level indicators of abuse and diversion show the greatest public health impact from hydrocodone and the least for tapentadol. Funding: Janssen Scientific Affairs.

(329) A phase 3 non-inferiority trial comparing the Sufentanil NanoTab® PCA System to IV morphine PCA for the treatment of acute post-operative pain

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IV PCA morphine is standard of care in many hospitals for managing post-operative pain, but is often associated with limitations, including programming errors, reduced patient mobility and infiltrated IVs. Whereas morphine can produce side effects from accumulation of active metabolites, sufentanil has a high therapeutic index and minimal pharmacokinetic differences based on age, liver or kidney function. Its rapid IV redistribution and short duration of action make it nonviable for IV PCA use. The Sufentanil NanoTab PCA System (ARX-01) is a novel preprogrammed, noninvasive PCA product candidate in Phase 3 development that dispenses sufentanil 15 mcg tablets sublingually with a 20-minute lockout. This Phase 3 randomized, non-inferiority trial was conducted at 26 US sites. Adult inpatients after major open abdominal surgery or orthopedic surgery (knee/hip replacement) were randomized 1:1 to ARX-01 or morphine IV PCA (1 mg q 6-minute lockout) for up to 72h. This study was designed to assess the ability of the two PCA systems to produce comparable patient satisfaction with the method of pain control. The 48-hour Patient Global Assessment was defined as the primary endpoint. Pain intensity and pain relief scores were obtained as secondary endpoints. To demonstrate therapeutic non-inferiority, 359 patients were randomized which provided 90% power. A 95% confidence interval of the difference in success rate between two treatment groups was constructed to determine non-inferiority of the two treatments. At the time of this abstract patient dosing was completed, and data from the study was being collected and analyzed. It is anticipated that the complete dataset will be available and presented at the meeting. Based upon the previously presented Phase 2 and other data, the Sufentanil NanoTab PCA System appears to be a promising non-invasive alternative to morphine IV PCA that avoids the risk of pump programming errors. Sponsored by AcelRx Pharmaceuticals.

(330) Usability of the Sufentanil NanoTab PCA System: results from three human factors studies

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The Sufentanil NanoTab® PCA System (ARX-01) is a novel, non-invasive, preprogrammed approach to patient-controlled sublingual analgesia currently in development that avoids the issues of medication and programming errors which occur with intravenous patient-controlled analgesia (PCA). Patients can utilize the System to deliver 15 mcg sufentanil tablets with a 20-minute lockout between doses. Radiofrequency identification uniquely matches each patient to the device. Two randomized, placebo-controlled Phase 2 studies and an open-label device functionality study demonstrated that sublingual sufentanil is efficacious and well tolerated in treating post-operative pain after major orthopedic or abdominal surgery. Three randomized, controlled Phase 3 trials are nearing completion. Human factors (HF) studies are an important aspect of drug/device development to allow end-user feedback on system design features, functionality, and usability. Three ARX-01 HF studies are reported here. Study 1 involved 19 nurse and central sterile/biomedical engineer participants without prior System training to assess the Instructions for Use (IFU) guide for comprehension. Study 2 involved 15 nurse participants with sessions conducted over a 4-day period. All nurses in Study 2 set up and programmed PCA pumps at least three times per week. Study 3 included 15 nurses and 15 "patient participants" (healthy male and female volunteers up to 80 years of age who spoke and read English fluently). Sessions were conducted over a 7-day period. No nurse PCA experience was required in Study 3. Study 3 "patient" participants averaged 61.5 years of age, were at least high school graduates. The ARX-01 System was found to be easy to use and the IFU well organized and relatively understandable. After a short period of training, nurses were able to successfully complete tasks most of the time with little prompting or referral to the user manual. Similarly, the "patient" participants found the System easy to use. Sponsored by AcelRx Pharmaceuticals.

(331) Prescription opioid tampering and abuse in the US

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Prescription opioid medications can provide relief to those with acute pain and allow many with moderate to severe chronic pain to lead more comfortable and productive lives. However, abuse of opioids is a tremendous problem in the US. These medications may be abused in their original form. Tampering by chewing or crushing to enable abuse by other routes such as snorting is also commonly reported. However, the prevalence of tampering is unclear. This study was conducted to estimate the prevalence of prescription opioid abuse and tampering in order to abuse in US adults. Participants from the US National Health and Wellness Survey were invited to complete an online survey assessing use, misuse, and abuse of prescription opioid medications. Abuse was defined as taking prescription opioid medication for the purpose of getting high. A total of 25,864 adults were screened. Prevalence was calculated using weights based on age, gender, race, and education. Abuse of prescription opioid medication in the 3 months before the survey was estimated at 1.31% of US adults, with approximately half of those (i.e., 0.67% of US adults) tampering to get high during that time. Opioids were most commonly abused in their original form, but snorting, chewing, and taking medication with alcohol were each reported by more than 40% of those abusing prescription opioids (after weighting). Most commonly abused drugs were acetaminophen-opioid combinations and oxycodone. Opioid abuse was associated with younger age, male sex, minority race, psychiatric illness, alcoholism, cigarette smoking, being employed, and higher household income. Those who tampered also abused more frequently and were more likely to use an opioid for pain. The prevalence of tampering suggests effective tamper-resistant technologies may be an important way to reduce abuse of these medications while preserving access for medical use. Kantar Health conducted this study with funding from Pfizer.