

pain. Participants were then asked four open-ended questions addressing their thoughts on the technology. A majority of nursing students reported they believe the technology should be integrated into nursing curricula as an adjunct to traditional teaching methods. The participants reported they enjoyed interacting with the computer-generated faces and they thought it was more beneficial than traditional teaching methods related to pain recognition, especially in situations where verbal communication is impaired.

I1 Lofexidine for Treatment of Opioid Withdrawal Symptoms in Opioid-Dependent Adults



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PURPOSE

Chronic opioid use leads to physiological dependence and highly distressing opioid withdrawal symptoms (OWS) during discontinuation. Chronic pain patients frequently report OWS as a barrier to discontinuation of opioid use or dose reduction. This study evaluated lofexidine, an alpha2-adrenergic receptor agonist for OWS treatment.

METHODS

This was a randomized, double-blind, inpatient study comparing lofexidine 2.4 mg (0.6mg QID) and 3.2 mg (0.8mg QID) to placebo treatment for 7 days after abrupt opioid withdrawal. Adults (N=603) dependent on short-acting opioids and seeking treatment were enrolled at 18 sites. IRB approval of the protocol was obtained at all sites. Short Opiate Withdrawal Scale of Gossop (SOWS-Gossop), the primary measure of efficacy, is a subject-rated, 10-item, quantitative, assessment of OWS. It has been validated as a sensitive and reliable instrument. Higher scores indicate worse OWS.

RESULTS

Decreases in overall SOWS-Gossop scores (over 7 days) were significantly greater for both lofexidine doses compared with placebo [pairwise differences in log-transformed, least-squares means = -0.21 for lofexidine 2.4-mg ($P=.02$) and -0.26 ($P=.003$) for lofexidine 3.2-mg]. Proportion of subjects completing the trial was higher for lofexidine-treated subjects versus placebo: 41.5% for lofexidine 2.4 mg (odds ratio = 1.9, $P=.007$), 39.6% for lofexidine 3.2 mg (odds ratio = 1.7, $P=.02$), and 27.8% for placebo. Overall adverse event rates were similar across groups. Hypotension-related events were most common for lofexidine but rarely led to study discontinuation.

CONCLUSION

In this study, lofexidine was effective and well-tolerated for treatment of OWS. The odds of completing the 7-day opioid withdrawal treatment were nearly doubled in the lofexidine groups compared with placebo. Lofexidine may provide a safe and effective non-opioid treatment option for subjects undergoing acute withdrawal from opioids, and could be accessible by all types of healthcare prescribers. Acknowledgments Supported by US WorldMeds, LLC, and National Institute on Drug Abuse (grant U01DA033276).

I2 Improving Inpatient Substance Use Screening to Inform Opioid Prescribing Risk in a Pediatric Hospital Setting



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AIM OF INVESTIGATION

Since 2013, nurses at Children's Hospital Colorado (CHCO) have conducted substance use screening with adolescent inpatients upon admission. In response to the opioid crisis, a multidisciplinary CHCO team aimed to leverage the screening data as part of a comprehensive risk assessment that could inform opioid prescribing practices. Specifically, the team aimed to increase adolescent screening rates and to implement new screening questions for caregivers of admitted patients.

METHODS

Twenty-eight inpatient nurses and nursing leaders were interviewed to understand the current state of the adolescent substance use screening process and to identify strengths and challenges of the process from a nursing perspective. Interview data was analyzed and presented to the opioid prescribing practices improvement team. Based on the interview data and best practices, the team modified the screening questions, optimized clinical decision support tools in the electronic medical record, and implemented a comprehensive education plan. The updated adolescent screening and new caregiver screening were implemented in December 2017 and we compared compliance to screening two months before and after implementation.

RESULTS

There was an increase in the percentage of adolescents screened after implementation of the comprehensive education plan from 49% ($n = 484$) to 55% ($n = 500$). Of those screened, 7% ($n = 33$) of adolescents screened positive. In addition, 77% ($n = 2,498$) of caregivers were screened in the first two months of implementation, with 2% ($n = 52$) of caregivers screening positive for substance use.

CONCLUSIONS

By understanding the substance use screening process from nurses' perspectives, the opioid team made improvements that are expected to improve screening compliance, data quality, and providers' ability to assess substance use risk when prescribing opioids. We anticipate additional improvements over time.

I3 Effectiveness and Safety of Intrathecal Ziconotide Use as the First Agent in Pump



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PURPOSE

The Patient Registry of Intrathecal Ziconotide Management (PRIZM) evaluated effectiveness and safety associated with intrathecal (IT) ziconotide use in clinical practice settings.

METHODS

PRIZM was an open-label, long-term, multicenter, observational study of adult patients with severe chronic pain who met ziconotide prescribing information criteria. This analysis reports change from baseline to month 18 in "average pain for the past 24 hours," on the 11-point Numeric Pain Rating Scale (NPRS; primary efficacy measure).

RESULTS

The all-treated population included 93 patients; 51 (54.8%) received ziconotide as the first agent in pump (FIP+) and 42 (45.2%) did not (FIP-). Mean (SD) baseline NPRS scores were 7.7 (1.8) in all-treated ($n=91$), and 7.4 (1.9) and 8.0 (1.6) in FIP+ ($n=50$) and FIP- ($n=41$) patients, respectively. Mean (SEM) percentage change from baseline in NPRS score at month 18 was -24.7% (6.6%) in all-treated ($n=26$), -38.5% (10.5%) in FIP+ ($n=14$), and -8.6% (4.5%) in FIP- ($n=12$) patients. In the subset of patients who had NPRS scores at months 3, 6, 9, 12, 15, and 18 ($n=21$), mean (SD) baseline NPRS scores were 7.8 (1.4) overall, and 7.3 (1.3) and 8.4 (1.2) in FIP+ ($n=12$) and FIP- ($n=9$) patients, respectively. Mean (SEM) percentage change in NPRS score from baseline to month 18 was -26.2% (7.5%) overall, -39.7% (11.1%) in FIP+, and -8.1% (5.4%) in FIP- patients. The most common adverse events ($\geq 15\%$ of all-treated population) were nausea (25.8%), confusional state (22.6%), dizziness (20.4%), auditory hallucination (18.3%), and diarrhea (16.1%).

CONCLUSION

In PRIZM, greater treatment response (as assessed by the primary efficacy measure) was observed when ziconotide was initiated as first-line IT therapy versus second-or-later IT agent in pump. Data from study completers suggest a sustained treatment response for up to 18 months. The

adverse event profile was consistent with ziconotide prescribing information.

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I4 Effect of Intrathecal Ziconotide as the First Agent in Pump on Patient-Reported Outcomes



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PURPOSE

The Patient Registry of Intrathecal Ziconotide Management (PRIZM) evaluated intrathecal (IT) ziconotide use in clinical practice settings.

METHODS

PRIZM was an open-label, long-term, multicenter, observational study of adult patients with severe chronic pain who met ziconotide prescribing information criteria. This analysis of ziconotide as the first versus second-or-later IT agent in pump reports Patient Global Impression of Change (PGIC) and change from baseline in 36-Item Short Form Health Survey

version 2 (SF-36v2) and Brief Pain Inventory-Short Form (BPI-SF) scores at month 18.

RESULTS

Of the 93 enrolled patients, 30 patients were still active in the study at month 18, of whom 56.7% (17/30) remained on ziconotide monotherapy. Fifty-one patients (54.8%) received ziconotide as the first agent in pump (FIP+), whereas 42 patients (45.2%) did not (FIP-). PGIC improvement was reported in 100.0% of FIP+ patients (n=9) versus 37.5% of FIP- patients (n=8) at month 18 relative to baseline. At month 18, mean change in SF-36 physical component score was 6.5 and 1.4 in FIP+ and FIP- patients, respectively, and mean change in SF-36 mental component score was 8.0 and -1.8, respectively. Mean change in BPI-SF Pain Severity domain score at month 18 was -2.6 and 0.2 in FIP+ and FIP- patients, respectively. Mean change in BPI-SF Pain Interference score was -3.3 and 0.4 in FIP+ and FIP- patients, respectively, at month 18. The most common adverse events ($\geq 15\%$ of overall population) were nausea (25.8%), confusional state (22.6%), dizziness (20.4%), auditory hallucination (18.3%), and diarrhea (16.1%).

CONCLUSION

In this PRIZM study, for those remaining on therapy, greater improvement in patient-reported outcomes (PGIC, SF-36, and BPI-SF) was observed when ziconotide was initiated as first-line IT therapy versus second-or-later IT agent in pump. The adverse event profile of ziconotide was consistent with the prescribing information.

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