A Web-Based Study of Self-Treatment of Opioid Withdrawal Symptoms with Loperamide

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**Abstract**

Many websites provide a medium for individuals to share their experiences and knowledge about different drugs. Such User Generated Content (UGC) can be a rich data source for the study of drug use patterns and trends. Method: A content analysis study was conducted to examine UGC posts on the use of loperamide, a piperidine alkaloid widely available over-the-counter (OTC) medication used for the control of diarrhea symptoms. Because of its general inability to cross the blood-brain barrier, loperamide is considered to have no abuse potential and is available without a prescription. Methods: A website that allows the free discussion of illicit drugs and is accessible for public viewing was selected for the study of loperamide use. The website contained 3,200 unique users since its inception in 2004. The web-log posts were retrieved using Web Crawler and retrieved in a local text corpus. All unique user names were anonymized. The corpus was queried to extract posts with a mention of loperamide and relevant brand names. Over 1,100 posts, covering a time period between 2001 and 2011, were identified and entered into MS foundation data base for manual coding. Results: Since the first post in 2005, there has been a substantial rise in discussions related to its use as non-medical opioid users, especially in 2010-2011. Loperamide was primarily discussed as a remedy to alleviate a broad range of opioid withdrawal symptoms, with dosages ranging from 20 mg down to 5 mg per day. The majority reported using loperamide to self-treat withdrawal symptoms, with a time period between 2001 and 2011, were identified and entered into MS foundation data base for manual coding. Coder Reliability Assessment. A random-subsample of 25% (20 posts) was selected for content analysis. The coding used an exclusionary or descriptive approach. Loperamide was coded to identify the intent of loperamide use, information on reported dosage and side effects. Qualitative and quantitative approaches were used to manage the coded data and to discover temporal patterns of identified codes and themes. Conclusions: This study suggests that loperamide is being used extra-medically by people who are involved with the abuse of opioids to control withdrawal symptoms. A growing demand among people who are opioid dependent for drugs to control withdrawal symptoms, and loperamide appears to fill that role. The study also highlights the potential of the Web as a "teaching aid" data source in identifying emerging drug use practices.

**Methods**

Data collection: A website that allows the free discussion of illicit drugs and is accessible for public viewing was selected for the study of loperamide use. The website contained 3,200 unique users since its inception in 2004. The web-log posts were retrieved using Web Crawler and retrieved in a local text corpus. All unique user names were anonymized. The corpus was queried to extract posts with a mention of loperamide and relevant brand names. Over 1,100 posts, covering a time period between 2001 and 2011, were identified and entered into MS foundation data base for manual coding.

**Results**

The first post on loperamide use appeared in 2005, and in 2011, there was a notable increase in discussions related to loperamide (Figure 1). Almost 70% of posts discussed loperamide as a remedy to self-treat opioid withdrawal symptoms. About 25% of the sample discussed uses related to loperamide's potential to cross blood-brain barrier to treat withdrawal symptoms. Loperamide was described as "a quick fix" or "an easy way" to control diarrhea symptoms. The majority of users reported using loperamide to self-treat withdrawal symptoms, with a dosage ranging from 20 to 30 mg per day.

**Conclusions**

This study suggests that loperamide is being used extra-medically by people who are involved with the abuse of opioids to control withdrawal symptoms. A growing demand among people who are opioid dependent for drugs to control withdrawal symptoms, and loperamide appears to fill that role. The study also highlights the potential of the Web as a "teaching aid" data source in identifying emerging drug use practices.