Emergency Department Risk Stratification After Opiate Overdose Is Just the Beginning

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The January 2019 issue of *Academic Emergency Medicine* reported on the Hospital Observation Upon Reversal (HOUR) with Naloxone Study. This study examined the ability of emergency medicine providers to use clinical judgment, a decision rule, or both to evaluate patients for safe discharge from the emergency department (ED) 1 hour after naloxone administration for suspected opiate overdose.[1] The topic of safe and timely discharge is important for the practice of emergency medicine, but not nearly as important as what comes next for our patients.

When a patient arrives at an ED following an out-of-hospital naloxone administration, clinicians must first focus on emergency evaluation and stabilization. If the patient survives the initial event, attention must next turn to strategies to prevent future occurrences. In this way, opioid use disorder must be treated like any other disease. The importance of addressing a particular disease is a function of its likelihood to result in morbidity and mortality for a patient. Weiner et al.[2] demonstrated that among patients treated with naloxone by EMS who did not die the same day, the 1-year mortality rate was approximately 10%. However, the exact short-term mortality rate for patients following an opioid overdose is unclear. Better understanding this rate would aid in the design of public health interventions and inform shared decision making between emergency medicine providers and patients.

We sought to determine the risk of 60-day mortality among males ages 18 to 54, enrolled in the HOUR study, who were discharged home and survived the initial 48-hour study period. Mortality was determined by a review of local medical examiner records. This protocol was approved by the University at Buffalo Institutional Review Board.

There were 350 patients included in this follow-up analysis. Although all survived to ED discharge and survived the initial 48-hour study period, tragically, eight (2.3%) died within 60 days of their original overdose. Half of those who died were less than 35 years of age.

The follow-up analysis relied on county medical examiner records and may have systematically underestimated the true mortality rate since deaths that were attributed to natural causes or that occurred outside of the jurisdiction would not be represented in medical examiner records. Many more patients are likely to have had nonfatal adverse overdose in the 60 days following ED discharge.

To put the observed 60-day mortality rate of 2.3% in perspective, a similar short-term mortality rate would likely be viewed as unacceptable if the same young patients presented to the ED for chest pain. In

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the context of ED evaluation of chest pain, a 1% to 2% acceptable miss rate is often discussed, but this typically applies to an older population and a composite endpoint that includes outcomes beyond just mortality,[3] yet the current standard of care following opioid overdose frequently results in patients simply being discharged home after a period of observation. Given the short- and long-term mortality risks for these patients, ED visits can, and should, be used as an opportunity to intervene.

Distributing naloxone kits to patients with opioid use disorder and their families is one such intervention strategy. Widespread community distribution of naloxone, when coupled with opioid overdose recognition training, has been shown to decrease mortality rates.[4] An ED encounter following an overdose is an opportunity to provide the patient and family with a brief training and an emergency naloxone kit.

Another promising harm reduction technique is ED-initiated buprenorphine/naloxone treatment for opioid use disorder. Multiple randomized controlled trials have demonstrated that patients in medication-assisted treatment programs are more likely to remain in treatment compared to patients who are given a placebo or no medications at all.[5] D'Onofrio et al.[6] demonstrated that patients who were started on buprenorphine/naloxone (Suboxone) and referred to outpatient treatment within 72 hours of ED discharge were more likely to be engaged in treatment at the 2-month mark. In the case of patients who have recently overdosed, a home induction may be considered in which the patient is discharged from the ED and takes the first dose following onset of withdrawal symptoms. In patients who present to the ED in opioid withdrawal, induction on buprenorphine/naloxone is also safe and appropriate. Both groups of patients should receive urgent follow-up with a qualified treatment program.

Opioid overdose patients depend on emergency medicine providers to provide more than just immediate lifesaving measures. Many emergency physicians understand and are willing to participate in opioid harm reduction programs, yet few actually do.[7] Further study is needed to better understand barriers to implementation of ED-based harm reduction strategies.

Patients who receive naloxone for opioid overdose and survive are at risk for death in the next 60 days. ED visits following opioid overdoses may be an underutilized opportunity to implement harm reduction strategies and reduce patients' short-term risk of death.

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