

2010, while deaths from heroin increased at a slower rate (2). With the advent of prescription drug monitoring databases, there has been resurgence in the abuse of heroin. However, OPRs are still frequently abused. In 2010, there were 135,971 United States (US) emergency department (ED) visits and 16,651 deaths in the US caused by OPR overdose (3,4). The estimated total ED cost for those discharged from the ED was \$234,542,324 (3).

The mainstay of treatment for opioid overdose is the mu opioid receptor antagonist naloxone. Naloxone is safe to administer, and severe adverse events are rarely reported (5). Most emergency medical services (EMS) systems mandate that all patients suspected of opioid overdose be transported to the emergency department (ED). This includes patients who improve after naloxone administration because of concerns that they are at risk for rebound toxicity related to the short half-life of naloxone compared to the longer duration of action of other opioids. Some have advocated for up to 6 h of observation after reversal of toxicity (6). However, the increase in ED overcrowding and lengthy wait times has led to efforts to develop methods to disposition these patients more rapidly. One group created a prediction rule for safe, early discharge of patients with presumed opioid overdose within 1 h of arrival to the ED (7).

The next step might be to question policies to transfer all opioid overdoses to the ED for evaluation and observation. In various European EMS systems, releasing such patients at the scene after a 15- to 20-min observation period, as long as they return to their baseline, is standard practice (8). One study determined risk factors (i.e., age >50 years and overdose during the weekend) that identify high-risk patients who are poor candidates for this strategy (9). The goal of this review is to determine if a “treat and release” policy is supported by the current available evidence.

EVIDENCE SEARCH

A PubMed MEDLINE search was performed with the keywords “prehospital AND naloxone” and “emergency medical services AND naloxone AND opioid overdose” with no limits, yielding 118 articles. EMBASE was searched with the terms “emergency medical services AND naloxone AND opioid overdose,” resulting in 42 citations. All citations were reviewed to identify original research evaluating the safety of administering naloxone to patients with suspected opioid toxicity in the prehospital setting and not transporting them to the hospital. Five relevant articles were identified. One article was excluded because its dataset was used in a larger trial that was included (10). The bibliographies of these articles were reviewed for additional references, but none were identified.

EVIDENCE REVIEW

Prehospital Treatment of Opioid Overdose in Copenhagen—Is it Safe to Discharge on Scene?

Population. This study included all patients with suspected opioid overdoses evaluated by the Medical Emergency Care Unit (MECU) in Copenhagen, Denmark, from 1994 to 2003 (11).

Study design. This was a retrospective chart review of all patients diagnosed with an opioid overdose in the MECU database. All overdose cases with a Danish social security number were checked for survival data with the Central Personal Registry, and autopsy reports on all subjects who died within 48 h of MECU contact were collected. Mandatory toxicologic screening was a part of these autopsy reports and included the substance most likely to be the cause of death. Patients who died within 48 h of MECU contact were further classified as “rebound toxicity unlikely” or “rebound toxicity likely” based on police investigations; patients seen alive >6 h after MECU contact were classified as “rebound toxicity unlikely.”

Primary outcome. The primary outcome was the risk of dying from rebound toxicity within 48 h of being released by the MECU.

Exclusion criteria. All patients diagnosed on scene by the MECU doctor were included. However, patients without a Danish social security or patients who refused to provide their social security number could not be followed in the Central Personal Registry.

Main results. There were 2241 cases of opioid overdose with a positive patient identification that were released at the scene. Among these, 18 deaths within 48 h were identified for an all-cause mortality rate of 0.80% within 48 h. Four of these cases were excluded: 2 patients were not given naloxone, 1 case was admitted to the hospital after MECU contact for an unrelated reason, and 1 subject committed suicide by hanging. Therefore, 14 deaths (0.62%) possibly caused by rebound opioid toxicity were identified. Opioid rebound toxicity was found to be the likely cause of death in 3 cases (0.13% [95% confidence interval {CI} 0.04–0.39%]). Another 1427 patients where positive identification was not obtained were treated for a presumed opioid overdose and released at the scene. Follow-up could not be obtained for any of these patients.

Assessment for Deaths in Out-of-Hospital Heroin Overdose Patients Treated with Naloxone Who Refuse Transport

Population. This study included all patients with suspected opioid overdoses evaluated by San Diego EMS or a mobile intensive care nurse (MICN) from 1996 to 2000 (12).

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