DEM Journal Club

Article Appraisal

Article: Emergency department-initiated buprenorphine/naloxone treatment for opioid dependence

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Resident Reviewer Name(s) and Residency Affiliation: Sara Treloar (RCPS-EM, PGY2) and Nathan Stefani (RCPS-EM, PGY1)

Faculty Methodology/Bio-statistics Resource Person: Dr. Corinne Hohl

Background and Study Objective(s):

As rates of opioid dependence and abuse climb higher than ever before, opioid agonism with buprenorphine /naloxone (here referred to as 'buprenorphine') has become an important means of therapy. Because those with opioid addiction often intersect with an emergency department (ED) at some instance, the emergency physician is uniquely positioned to engage the patient in opioid agonist therapy where appropriate. The authors of this study sought to evaluate the efficacy of three different ED-based interventions for opioid dependence based on the primary outcome of whether or not patients were still receiving addiction treatment thirty days later. The three interventions were as follows: 1) screening and direct referral to outpatient treatment services, 2) screening, a brief instructional interview, and referral, or 3) screening, a brief instructional interview, ED-initiated buprenorphine therapy, and referral. Secondary outcomes to gauge relative successfulness of these interventions included self-reported days of illicit opioid use, urine testing for illicit opioids, HIV risk-related behaviours, and utilization of addiction treatment services.

Study Design:

This study was a randomized clinical trial, enrolling 329 opioid-dependent patients who visited the ED of a major urban teaching hospital in Connecticut from April 2009 to June 2013. All patients treated in the ED during certain study hours were screened for opioid use unless they could not consent, had acute psychiatric distress or severe injury, were in police custody, were under 18 years of age, were pregnant, were non English-speakers, required opioids for pain management, or were already in treatment for opioid addiction. Out of the 71742 screened, 1201 were opioid users. Further exclusion criteria included admission to hospital, not clinically significant opioid dependence, urine negative for opioids, and refusal. In the end, 329 eligible patients were randomized into one of the three intervention arms using computerized stratified randomization; 104 patients were in the referral-only group, 111 entered the brief intervention group plus referral, and 114 received a buprenorphine induction in addition to the other interventions. In the ED-initiated buprenorphine group, those exhibiting sufficient opioid withdrawal were started on their first dose of buprenorphine in the ED while those not in withdrawal were given a well-detailed home-induction regimen. (Following initial induction, patients in the buprenorphine group were provided with office-based buprenorphine for ten weeks, after which they were transferred for ongoing opioid agonist therapy to either a community group, clinician, or were offered a two-week detoxification.) Thirty days post

induction, patients in each group were asked about their enrolment in a formal addiction treatment, their self-reported level of illicit opioid use in the past seven days, HIV risk-taking activities, urine opioid screen, and volume of/type of addiction treatment services accessed.

Results:

In regards to the primary outcome, 78% (95% CI: 70%-85%) of the buprenorphine group were involved in treatment at thirty days compared to 37% (95% CI: 28%-47%) in the referral-only group and 45% (95% CI: 36%-54%) in the brief intervention-plus-referral group. The buprenorphine group also had a statistically significant decrease in self-reported illicit opioid use that was greater than the significant decrease also noted in the other two treatment arms. The opioid-negative urine test results did not differ with any statistical significance across the treatment groups, nor did the HIV risk behaviours, although, at thirty days, patients in all three groups did have reduced HIV risk from baseline. Finally, there was no statistically significant difference between groups in the mean number of visits to outpatient addictions treatment facilities. Interestingly, post hoc analysis of the subgroup that initially presented seeking opioid treatment (34% of total eligible patients) showed no significant difference in the primary outcome across the three groups.

Validity of Results:

The results of this study were considered valid. In particular, assignment of patients was randomized to create well-balanced groups in regards to major demographic and clinical characteristics. All patients were analysed in the groups they were randomized to and most of the clinically salient outcomes were considered. Given the nature of the treatment, it was not possible to blind the patients, health workers, or study personnel to treatment. Despite extensive screening, the authors did not achieve their intended sample size. While being underpowered to perform subgroup analyses, they did have sufficient enrollment to obtain statistically significant data for their primary outcome and one secondary outcome. Nearly all of the eligible patients were accounted for at the end of the trial for the primary outcome, but more were lost to follow-up for the secondary outcomes. Had there been better retension, more secondary outcomes may have also given significant differences.

Generalizability of Results:

The success of this study depended on the diligent screening of thousands of patients for opioid dependence. As a result, there was a significant proportion (>55%) of patients identified through screening who would not necessarily access opioid treatment in regular EDs where such screening does not exist. While there was excellent diversity represented among the study population, including those with concomitant addictions issues, psychiatric conditions, and all manner of opioid addiction severity, over 75% had at least part-time employment. This shifts the study population away from the majority of patients seen in our EDs who would most benefit from the overdose-preventing intervention of buprenorphine: namely those with no fixed address and/or no sustainable employment who regularly use intravenous opioids. This study was done in the USA where engaging healthcare typically carries a hefty price tag. The authors strove to remove financial barriers by ensuring all interventions were free of charge or covered by a patient's insurance plan. This study did hinge on dedicated research personnel who screened patients, facilitated the brief intervention, and coordinated tailored referral plans. This kind of dedicated addiction support is just not feasible in most regular EDs. Also, ED staff in this study were specifically trained to prescribe buprenorphine and were comfortable initiating therapy when indicated. For many doctors, however, ED-initiated inductions and home inductions are unfamiliar concepts that have yet to make their way into wide-spread practice.

The Bottom Line:

Journal Club attendees felt that this study, albeit limited in generalizability, does support physicians who choose to initiate buprenorphine therapy in the ED for opioid-dependent patients. Both initiation of buprenorphine treatment and appropriate follow-up care are important for improving rates of addiction treatment adherence up to one month post intervention. It is yet to be seen, however, whether short-term outcomes relate to more convincing measures of success such as preventing overdose deaths, improved cost-effectiveness, or longer-term addictions therapy compliance. A replicate trial with similar methodology done in a new setting such as a Canadian urban academic hospital, as well as a cost analysis of the various treatment options, could be a direction of future study.