The Characteristics and Prevalence of Agitation in an Urban County Emergency Department

James R. Miner, MD*; Lauren R. Klein, MD; Jon B. Cole, MD; Brian E. Driver, MD; Johanna C. Moore, MD; Jeffrey D. Ho, MD

*Corresponding Author. E-mail: jimminer@hotmail.com, Twitter: @JimMiner1.

Study objective: We seek to determine the characteristics and prevalence of agitation among patients in an urban county emergency department (ED).

Methods: This was a prospective observational study of ED patients at an urban Level I trauma center. All ED patients were screened during daily randomized 8-hour enrollment periods. Adult agitated patients, defined as having an altered mental status score greater than 1, were included. Trained research volunteers collected demographics and baseline data, including the presenting altered mental status score, use and type of restraints, and whether any initial sedative was given. The altered mental status score, vital signs, and any medications or treatments given were recorded every 5 minutes thereafter until the patient had an altered mental status score less than 1. Providers were asked to describe clinical events resulting in an intervention occurring during the patient course, including hypotension, vomiting, increased monitoring, use of supplemental oxygen or airway adjunct, or intubation. The provider also completed a checklist to determine the presence of delirium symptoms.

Results: A total of 43,838 patients were screened (45.1% women; median age 33 years; range 0 to 102 years). The prevalence of agitation was 2.6% (1,146/43,838; median altered mental status score 2). Of these patients, 84% (969/1,146) required physical restraint and 72% (829/1,146) required sedation with an intramuscular injection. Sedative agents were olanzapine in 39% of patients (442/1,146), droperidol in 20% (224/1,146), haloperidol in 20% (226/1,146), a benzodiazepine in 6% (68/1,146), and ketamine in 5% (52/1,146). Delirium characteristics were observed in 0.6% of patients (260/43,838), representing 23% of agitated patients in the ED. Clinical events were observed in 13% of agitated patients (114/866) without delirium symptoms and 26% (68/260) with delirium symptoms. Characteristics associated with a clinical event included delirium symptoms (odds ratio [OR] 1.6; 95% confidence interval [CI] 1.2 to 2.4), a cause related to a drug other than alcohol (OR 1.7; 95% CI 1.1 to 2.9), or a nondrug-induced cause of agitation (OR 3.5; 95% CI 2.3 to 5.6).

Conclusion: The prevalence of agitation in the ED was 2.6%. Agitated patients frequently required restraint and sedation, with significant rates of clinical events requiring intervention. [Ann Emerg Med. 2018;■:1-10.]

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INTRODUCTION

Background

Acutely agitated patients present frequently to the emergency department (ED).[1-5] These patients are agitated for a variety of reasons, ranging from exacerbations of psychiatric disease, to intoxication with alcohol or other illicit substances, to altered mental status caused by shock or metabolic derangements. Stabilization of this acutely undifferentiated condition is important to facilitate patient safety and medical evaluation, and also to ensure the safety of providers caring for them. However, the overall prevalence of agitation in the ED and subsequent management have not been well described.

Importance

Injuries and sudden deaths have been reported among agitated persons during attempts to restrain and care for them in both custodial arrests and medical stabilization.[6] There have been studies examining many of the restraint tools, techniques, and positions, and none have conclusively shown that they are primarily causal in creating physiology that leads to death.[7-15] It is not known whether agitation itself or the restraint procedures associated with it are most associated with morbidity.

A relationship between physiologic stress and morbidity associated with the treatment of agitation has long been suspected.[2,4,9,11,13,15-19] Although a variety of mechanisms have been proposed, a single unifying cause has not been

Editor's Capsule Summary

What is already known on this topic

The prevalence and characteristics of behavioral agitation among emergency department (ED) patients are poorly described.

What question this study addressed

This cross-sectional, single-site study recorded demographics, physiologic and treatment characteristics, and treatment outcomes of 1,146 agitated patients presenting during a random selection of shifts.

What this study adds to our knowledge

Almost 3% of ED patients were agitated (as defined by a validated scale), of whom 23% met criteria for delirium. Most agitated patients required physical restraint, chemical restraint, or both. Clinical interventions and adverse events were more common among agitated patients with delirium, and among patients whose agitation was not attributable to alcohol or drugs.

How this is relevant to clinical practice

Although agitation has low rates of serious adverse events in the ED, certain groups are more likely to need clinical interventions. Future study of best treatment pathways is needed.

determined. This lack of information is likely due to the variety of causes that lead to agitation and the variety of treatments available. To identify factors associated with morbidity among these patients, it is necessary to study agitation from any cause, associated treatments, and short-term interventions and adverse events. Stratton et al[20] described 100% of arrest-related deaths as associated with agitation in a study focusing on subjects with a condition described as excited delirium syndrome. This condition may represent a subset of agitated patients and special risk for complications.

Goals of This Investigation

In this study, we sought to determine the prevalence of agitation among patients presenting to an urban county ED, the treatments used, clinical interventions required, the duration of treatment and disposition, and the frequency of adverse events in agitated patients. These findings can be used to describe the treatment of patients with agitation, and to plan further research into both their condition and optimal management. As a secondary goal, we also determined the prevalence of patients who could be described as having symptoms of delirium and contrasted them with agitated patients who did not to explore the group of patients who may be at risk of excited delirium syndrome.

MATERIALS AND METHODS

Study Design and Setting

This was a prospective, cross-sectional, observational study of patients undergoing treatment for acute agitation in an urban Level I trauma center ED with an annual census of 109,000 patients and an admission rate of 22%. In our ED, agitated patients are evaluated by a physician as soon as possible after arrival and identification of their undifferentiated agitation, with a goal of assessment within 1 minute. During this initial assessment, the physician determines whether physical or chemical restraint is required; the goal of these procedures is to control patients' agitation to maintain their safety and facilitate a rapid evaluation for an underlying cause of agitation. Patients are then placed in an observation or critical care area for serial examinations and monitoring of their condition.

Patients with these conditions during the periods evaluated in this study were not amenable to undergoing informed consent, and because the research involved the use of existing information with minimal risk, a waiver from informed consent was granted by the Hennepin County Medical Center Human Subjects Research Committee. Patients enrolled in the study were given an information sheet describing the purpose and scope of the study, and no identifying information was collected.

Selection of Participants

Trained research volunteers screened all ED patients during daily randomized 8-hour enrollment periods (7 AM to 3 PM, 3 PM to 11 PM, and 11 PM to 7 AM). Shift randomization was conducted with a random-number sequence and was performed in 1-month blocks. Age, sex, time of arrival, and eligibility were recorded for all screened patients, including the presence of an altered mental status score greater than 1, and exclusion criteria. Adult agitated patients were enrolled, with agitation defined as an altered mental status score greater than 1 on the altered mental status scale (Table 1).[2,3,21,22] Patients were excluded if they were younger than 18 years, pregnant, under custodial arrest, not accessible to the research staff, sexual assault victims, suicidal, or critically ill, or if they declined to have data collected. During study periods, all patients in the ED were accounted for in a study log that included the number of patients who arrived in the ED during the shift, met