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APPROACH TO THE AGITATED EMERGENCY DEPARTMENT PATIENT

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☐ **Abstract—Background: Acute agitation is a common occurrence in the emergency department (ED) that requires rapid assessment and management. Objective: This review provides an evidence-based summary of the current ED evaluation and management of acute agitation. Discussion: Acute agitation is an increasingly common presentation to the ED and has a broad differential diagnosis including metabolic, neurologic, infectious, toxicologic, and psychiatric etiologies. Missed diagnosis of a dangerous etiology of the patient's agitation may result in severe morbidity and mortality. Assessment and management of the agitated patient should occur concurrently. Focused history and physical examination are recommended, though control of the patient's agitation may be required. All patients should receive a point-of-care glucose test, with additional testing depending upon the specific patient presentation. Initial management should involve verbal de-escalation techniques, followed by pharmacologic interventions, with physical restraints reserved as a last resort. Pharmacologic options include first-generation antipsychotics, second-generation antipsychotics, benzodiazepines, and ketamine. Finally, the management of pediatric, pregnant, and elderly patients warrants special consideration. Conclusion: Acute agitation is an important presentation that requires prompt recognition and treatment. A focused and thorough examination coupled with appropriate management strategies can assist emergency clinicians to safely and effectively manage these patients. Published by Elsevier Inc.**

☐ **Keywords—agitation; psychosis; delirium; control; benzodiazepine; antipsychotic; ketamine; physical restraint**

INTRODUCTION

Background

Altered mental status accounts for 5–10% of emergency department (ED) patient visits (1–4). Among these patients, a subset present with acute agitation. The etiology can vary widely, including medical, substance-induced, and psychiatric causes (4–10). These patients may harbor major illnesses with the potential for significant morbidity or mortality if not diagnosed and managed, while rapidly controlling their agitation (4–6,9).

As a result of this agitation, patients may present a risk to themselves or others (5,6,11). Almost 50% of medical providers will be a victim of violence during their career (5,6,12,13). A survey of physicians found that 73% were threatened in the workplace, and 36% were assaulted during residency (14). This survey also found that two-thirds of physicians received minimal or no formal training in the management of the agitated patient (14). Additional studies suggested that only 20–40% of hospitals possess a formal training program for the management of combative patients (15–17).

These studies reflect the need for further education on this condition. This review seeks to provide physicians with an overview of the clinical features, differential diagnosis, emergency medicine evaluation, and management of the acutely agitated patient in the ED.

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METHODS

Authors searched PubMed and Google Scholar for articles using a combination of the keywords "agitated," "sedation," "psychiatric," and "emergency." The literature search was restricted to studies published in English. Authors reviewed all relevant articles and decided which studies to include for the review by consensus. A total of 126 articles were selected for inclusion in this review.

DISCUSSION

Differential Diagnosis

Agitation can encompass a wide variety of findings, and a patient's agitation may be secondary to a dangerous medical condition rather than primary psychosis (4–6). Drug and alcohol intoxication are the most common diagnoses in the ED (4–7,18–22). Other conditions that may result in agitation are shown in Table 1 (4–7,18–22). These conditions require rapid diagnosis and management.

Clinical Features and Evaluation

Emergency physicians should assess for the cause of the agitation when this can be completed safely (Table 1). If possible, initial assessment and de-escalation should occur at the same time. It may be necessary to calm or sedate the patient first to avoid harm to the patient or providers. However, after this, it is important to rapidly perform a focused history and physical examination, assessment of vital signs, and obtain any relevant laboratory or imaging tests (5,6,18–21).

The patient evaluation should include obtaining the history, performing a focused physical examination, and assessing the degree of patient agitation. One of the first determinations is whether delirium or excited delirium is present. Delirium may be an underlying component of the patient's agitation. Delirium is an organic condition associated with a global disturbance in cognition, attention, or consciousness. It develops abruptly and fluctuates over time (18,21–25). Close to 40% of elderly patients in the ED may demonstrate alteration in mental status, with 25% demonstrating delirium (21,22,26). Patients can present with disturbances in the sleep/wake cycle and alteration in consciousness ranging from coma to hyperactive agitation (21–25). Delirium may also present with shifting attention, difficulty following commands, and trouble with concentration (5,6,21–25). Agitation is not always present in delirium, with only one-third of cases demonstrating agitation (26). Delirium itself is a medical emergency, with hospital mortality rates approaching 33% (25–29).

Table 1. Dangerous Causes of Agitation

System	Etiology
Metabolic/endocrine	Electrolyte abnormalities (e.g., sodium, calcium, magnesium, potassium, phosphate)
	Hypoglycemia
	Hyperglycemia (eg, DKA/HHNK)
	Hypoxia
	Hypercarbia
	Renal or liver failure
	Thyrotoxicosis
	Myxedema coma
	Nutritional deficiency (e.g., Wernicke's, vitamin B12 deficiency)
Infection	Sepsis
	Systemic infections
	Fever-related delirium
Neurologic	Head injury
	Stroke
	Intracranial mass
	Intracranial hemorrhage
	CNS infection (e.g., meningitis, encephalitis, abscess)
	Seizure
	Dementia
Toxicological	Anticholinergic intoxication
	Stimulant intoxication
	Steroid psychosis
	Antibiotic reaction
	Other drug reaction
	Carbon monoxide toxicity
	Alcohol intoxication or withdrawal
	Toxic alcohols
	Serotonin syndrome
	Neuroleptic malignant syndrome
Other conditions	Shock (e.g., hypovolemic, cardiogenic, distributive, obstructive)
	Burn
	Hypothermia
	Hyperthermia
Psychiatric	Psychosis
	Schizophrenia
	Paranoid delusions
	Personality disorder

DKA = diabetic ketoacidosis; HHNK = hyperosmotic hyperglycemic nonketotic state; CNS = central nervous system.

Excited delirium is a subset of delirium presenting as an acute agitated state (11,30). It is marked by delirium and agitation (e.g., fear, violence, shouting, hyperactivity, panic), followed by sudden cessation and respiratory compromise, leading to death (11,30–33). Hyperthermia is typically present, as is exaggerated strength (11,30–33). Nearly two-thirds of patients die at the scene or prior to transport (11,30–33).

Chronic cognitive impairment may also contribute to agitation. Patients with dementia, developmental disability, or severe brain injury may display agitation and confusion in unfamiliar settings (21).

History should be obtained from the patient, emergency medical services personnel, family, witnesses, and caregivers (5,6,9). One study found that the history