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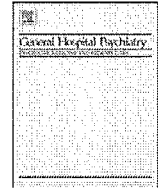
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Emergency Psychiatry in the General Hospital

The emergency room is the interface between community and health care institution. Whether through outreach or in-hospital service, the psychiatrist in the general hospital must have specialized skill and knowledge to attend the increased numbers of mentally ill, substance abusers, homeless individuals, and those with greater acuity and comorbidity than previously known. This Special Section will address those overlapping aspects of psychiatric, medicine, neurology, psychopharmacology, and psychology of essential interest to the psychiatrist who provides emergency consultation and treatment to the general hospital population.

The assessment and management of the violent patient in critical hospital settings ☆☆☆

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ABSTRACT

Objective: Patient violence and aggression is prevalent in critical care settings, yet clinicians are often inadequately trained to assess and respond to these types of behaviors. Targeted toward trainees as well as seasoned clinicians, this article provides an updated review of the literature regarding the management of violence in the emergency department.

Methods: This narrative review is largely derived from research articles and reviews published since 2000. We conducted a systematic search of electronic databases for review articles or studies examining patient violence and aggression in critical care settings. Electronic searches were supplemented by manual searches of reference lists.

Results: Current statistics, risk factors and imminent signs of violent patient behavior are presented. We conclude with recommendations for pharmacological and psychological interventions that can help manage aggressive behavior in the emergency department.

Conclusions: The relatively high frequency of aggressive and violent behavior in critical care settings increases the likelihood that clinicians working in this environment will encounter this situation. It is our hope that providing additional information about the factors associated with and techniques for managing violent patient behavior will reduce the occurrence of injuries in health care professionals in emergency departments.

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Even though violence towards mental health care professionals occurs at an alarming rate, many critical care clinicians are not adequately trained to deal with this behavior [1]. In 2000, Tishler, Gordon and Landry Meyer reviewed the existing literature and offered strategies for assessing and managing violent patients [2]. Not surprisingly, in the 12 years since the paper was published, there has been additional work in this area. The newer papers have not challenged or repudiated the suggestions and conclusions of the 2000 article. However, larger, more detailed studies are now available, and this information warrants an updated examination of the current

literature with a focus on mental health professionals working in emergency departments (EDs).

Tishler et al. ended their article with a call for additional training for mental health professionals, who are likely to encounter violent and aggressive patients. For most ED clinicians, the plea for additional training continues to be relevant and important today.

1. Current statistics

The rate of violence against mental health clinicians in general remains high. According to Pope and Vasquez [1], one in every five psychologists has been physically attacked by a patient. The assault rate occurring across psychiatrists' careers is approximately 40% [3]. Rosack reported that the annual rate for nonfatal violent crime against mental health professionals is 68.2 per 1000 workers [4]. This number is shocking when compared to the annual rates of violent crime against all occupational categories (12.6 per 1000 workers) and

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physicians outside mental health settings (16.2 per 1000). Antonius et al. [5] suggest that clinicians are likely to underreport aggressive and violent acts; therefore, current numbers may not capture the true prevalence of these events.

As mentioned in the previous Tishler et al. paper, the risk of violent victimization is greater in clinicians with less experience [5,6]. Guy et al. [6] found that 46% of all attacks on therapists involved graduate students, trainees or residents, and nearly 80% of patient assaults on therapists occurred in their first 8–10 years in the field. Surveys of psychiatric residents found an assault rate ranging from 19% to 64% [3]. Novice clinicians may be less alert to cues predicting violence, set fewer limits and inadvertently allow aggressive behavior to escalate [6].

Clinicians who work in the ED experience the highest level of patient violence since high-risk patients are frequently evaluated and treated in this setting. As many as 1.7 million medical ED contacts per year involve agitated patients [7]. Up to 10% of patients seen in psychiatric emergency settings may be violent during their evaluation [8]. Several factors increase the risk for violence in the ED: (a) the lack of a robust therapeutic alliance to defray escalating violence, (b) the wait for care which may be long and frustrating and occur in a loud and chaotic area, (c) toxic alcohol and drug reactions, (d) unhelpful partners who accompany patients and can escalate the stressful nature of the interactions and (e) overcrowding and the typically small spaces available for assessment and treatment [3,9].

Dinkelmeyer and Johnson [10] found that most mental health clinicians continue to receive little education about treating potentially violent patients. The paucity of training is particularly problematic for clinicians in the early phases of their careers since new professionals are the most common targets. In 2005, Gately and Stabb [11] found that doctoral psychologist trainees rated their knowledge of intervention strategies and defense techniques as “virtually none” and “poor.” Similarly, one third of psychiatric residents reported inadequate training in assessing and dealing with violent patients [5]. Trainees are frequently required to work in the ED during internships and residencies, resulting in a potentially problematic juxtaposition of little experience with high violence potential from patients.

2. Risk factors for violent behavior

Clinicians working in EDs often have less predictive historical information about a patient at their disposal than their counterparts in other settings [12]. Collecting additional information may be challenging due to logistical constraints of the ED (e.g., having to assess and triage patients rapidly) because patients may be too psychotic to provide accurate information or because patients refuse to sign releases of information when confronted with possible civil commitment [13]. Partly due to this limited information, studies have shown that clinicians' ability to predict violence appears to be only slightly more than 50% [14]. Therefore, it is important for clinicians to maintain a working knowledge of common risk factors that are associated with patient violence.

Tishler and colleagues previously summarized the research on the risk factors for violent and aggressive behavior. Although the risk factors have not changed, there has been a move toward identifying small clusters of patients who are typically involved in a large number of violent incidents. A recent study found that nine factors correctly classified 80% of violent patients at admission to an acute psychiatric hospital: diagnosis of psychotic disorder or bipolar disorder, age younger than 35 years, male gender, below-average estimated intelligence, psychiatric history, no history of employment, homelessness and aggressive/agitated behavior [15]. Additional conditions that can lead to aggressive behaviors include presence of current psychotic (particularly persecutory delusions and/or command hallucinations) symptoms, presence of current manic symptoms,

central nervous system or systemic infections, drug overdose or intoxication, head traumas or neurological impairment, and sedative-hypnotic agent withdrawal [16–18].

Lussier et al. [19] and Antonious et al. [5] also highlighted the following subgroups of patients as individuals who are likely to be *chronically* violent (i.e., four or more episodes of this behavior) and may therefore warrant special attention in the ED:

1. older men with a combination of schizophrenia, history of violence toward others and concomitant substance use disorder
2. men or women with borderline and/or antisocial personality disorder, history of violence toward others and concomitant substance use disorder
3. men or women with antisocial personality disorder and co-occurring major mental disorders

Patients who do not fit the foregoing criteria can still become aggressive. Therefore, assuming that all violent patients belong to a homogeneous group is inappropriate and potentially dangerous [5]. Therefore, clinicians should also be alert to environmental and situational antecedents, which can trigger acute aggression and violence [10,20].

3. Potential antecedents

Common environmental antecedents that can trigger violence include romantic obsessions; divorce; death of a loved one; financial problems; recent incarceration, police arrest or elopement from mental health facility; involuntary transport to the hospital or a cumulative combination of multiple life stressors, such as contentious child custody battles [20].

While it is important to determine which patients have a past history of substance use and abuse, current use may be a more relevant antecedent of aggressive behavior [21]. Patients currently under the influence of stimulants (e.g., cocaine, crack, amphetamines and phencyclidine) warrant special concern since these drugs can result in feelings of disinhibition, grandiosity and paranoia [22]. Clinicians should also watch for signs of alcohol use/abuse since disinhibited patients under the influence of this drug may also become violent. The *smell* of alcohol is a clear and direct warning of the potential for aggressive behavior.

The rise in methamphetamine use is troubling. Methamphetamine-induced psychosis resembles the acute symptoms of paranoid schizophrenia, with associated delusions, hallucinations, paranoia and loss of insight [23]. In addition, methamphetamine users can be aggressive, violent and potentially seriously dangerous [24]. Clues that patients have recently used methamphetamine include severe infections at injection sites, tooth decay, a gaunt appearance and a *distinct odor of ammonia* [23].

Situational variables associated with ED settings can trigger aggressive and violent behavior. Staff–patient interactions that are perceived as threatening to the patient's status (e.g., denial of impractical, unrealistic or impossible requests) can cause outburst of aggression and violence [25]. Excessive sensory overload (e.g., the combination of routine hospital sounds, fluorescent lighting and noises from other patients) may trigger patients with psychotic symptoms who are already overwhelmed with internal stimuli such as auditory hallucinations [26]. Discussing treatment plans or security worries outside patients' rooms poses the risk of being overheard and might also trigger aggressive behavior.

4. Imminent signs of violence

In addition to becoming familiar with risk factors and antecedents, clinicians should be sensitive to indications that a patient is on the

verge of becoming aggressive and/or violent. Suggested warning signs include:

- loud talking
- profane, intimidating or overly sexual language
- demanding unnecessary care
- accusing clinicians of conspiring against the patient
- throwing or punching inanimate objects
- agitated behavior (e.g., rapid pacing, darting eye movements, invading personal space, clenched or gripping hands, clenched jaw)
- inability to comply with directions and/or reasonable limit setting [22,26]

An escalation of any of these signs is worrisome and may require more instantaneous intervention strategies.

5. Prevention and intervention

As mentioned previously, many clinicians do not feel confident in their training and skills when dealing with aggressive and violent patients. Many clinicians tend to rely on one particular technique that is most comfortable [27]. For example, highly verbal staff members often use verbal reasoning or logical discussion tactics even when these approaches are inappropriate for a given situation. Sandberg, McNeil and Binder [28] discuss the importance of developing a repertoire of responses that can be used across different situations and patients. Training can fill a clinician's intervention "toolbox" with verbal, physical and restraint techniques that permit flexibility in responding. Therefore, if one intervention fails, other strategies could be utilized.

In the previous paper, Tishler et al. provided a range of suggestions for responding to violent and aggressive patients that are still relevant to clinicians in the ED. Patients with the potential for violence should be separated from others in order to reduce stimulation and excitement and prevent escalating agitation and potential dangerousness. Weapons should be removed, and the patient should wait in a room without access to potentially dangerous tools (e.g., scalpels, syringes, blunt objects, glass cabinet doors). A responsible party (an adult or another member of the ED staff) should wait with the patient until assessment and disposition can occur. The presence of security personnel in the treatment room can be upsetting to patients (particularly those who are paranoid); therefore, it may be preferable to have security staff outside the room or hallway. However, it may be necessary to seek the assistance of security and/or community law enforcement officials to intervene in extreme cases [29].

Verbal strategies can be used to help patients identify and discuss underlying issues leading to aggression (e.g., feelings of fear, pain, helplessness, humiliation, etc.) [30]. Asking about underlying feelings and imminent aggressive or violent thoughts can be as essential as asking about suicidality. Patients are not likely to respond "Attack you?! That's a good idea, thanks!!" in response to a clinician's empathetic line of questioning.

Physical/environmental strategies can also be used to maintain a safe and secure setting and defuse aggressive behavior. For example, conversations with agitated patients can be moved to a larger room, which may feel less claustrophobic and stressful. If patients appear to be approaching physical aggression, call for assistance by screaming "STAFF!" repeatedly until help arrives [26]. Simply gathering other staff members around as a show of overwhelming force may deter patients from engaging in violent behavior. A counterintuitive but effective way to minimize injury from patients who do not have access to weapons involves moving as close to them as possible, clenching them and hanging on until additional help arrives [26].

Manual restraint and seclusion techniques have not changed since the publication of the Tishler et al. paper. However, there are some

additional options for pharmacological intervention. The preferred medication depends on the situation and need for rapid action, as well as the patient's level of cooperativeness and health status.

Acute threatening and violent behavior in the context of intoxication, delirium or psychosis – or of a combination of these factors – can respond well to prompt use of medicine. Imminent or ongoing actual violence may also require pharmacological intervention immediately after physical restraint. The specific medication selected depends on the nature of the patient's behavior, the primacy of the threat of violence and the patient's specific medical condition and history [31,32].

Antipsychotics, which block the activity of the neurotransmitter dopamine at D2 receptors, are the "workhorse medicines" of acute violence management. "Typical" antipsychotics (e.g., chlorpromazine, droperidol, perphenazine, fluphenazine and haloperidol) are variably active at acetylcholine and histamine receptors in addition to D2 receptors. In contrast, "atypical" antipsychotics (e.g., olanzapine, risperidone, quetiapine, ziprasidone, aripiprazole and clozapine) impact serotonin and norepinephrine receptors as well as D2 receptors [33]. All antipsychotics can decrease agitation and aggressive behavior. These medications can also reduce psychotic symptoms that are triggering aggressive and violent behavior, especially in patients who are currently not medicated or undermedicated [29]. Until relatively recently, The Food and Drug Administration (FDA) had not approved the use of antipsychotics for the treatment of agitation or violence. Despite the relatively recent approval for treating agitation accompanying autism, the widespread use of these medications in the ED continues to be "off-label" [34]. As result, caution is warranted when using these medications in the ED.

Antipsychotics are available in liquid, dissolving wafer, pill and injectable formulations. Oral medication should be offered first in patients who are agitated but not imminently dangerous. The liquids and wafer formulations are faster acting and may be more palatable to patients than pills. However, if violence seems imminent, if the patient is already violent or if the patient refuses oral medications, parenteral medicine may be required [29,35]. Intravenous administration is the fastest method of administering antipsychotics, but may be impractical without the patient's consent. Intramuscular injection is the delivery method of last resort, but may be necessary in extreme cases.

The risks of using all forms of antipsychotics to treat violent behavior in the ED include sedation, neuromuscular effects, postural hypotension, cardiovascular and respiratory complications and collapse, seizures and associated general mortality [35]. In some sense, sedation can be viewed as a desirable side effect in this setting. Patients who are out of control are often in substantial distress even after the threat of violence is removed. A period of sleep usually relieves that distress. However, using medications to the point of sedation can cause cardiovascular and/or respiratory collapse. Patients who are sedated need careful monitoring prior to discharge or transfer from the ED.

Neuromuscular effects from antipsychotic medications are always undesirable. The typical antipsychotics can cause Parkinsonian-like tremor, muscular stiffness, involuntary movements (dyskinesia), acute muscular rigidity (dystonia; e.g., the uncommon but terrifying oculogyric crisis, in which the eye muscles spasm and the pupils roll up under the eyelid, causing sudden loss of vision) and akathisia (subjective feeling of muscle discomfort accompanied by a feeling that movement will relieve the distress) [35]. Akathisia can cause continuous physical movement which is often mistaken for escalating agitation, prompting the administration of more antipsychotic and making the akathisia worse. Atypical antipsychotics can also cause neuromuscular side effects, with less frequency than typical antipsychotics [36].

All antipsychotics can cause postural hypotension (which increases the risk of falls) and a potentially dangerous heart rhythm

syndrome called a “prolonged Q-T interval,” which in turn can lead to a fatal cardiac arrhythmia [35,37]. While prolonged Q-T intervals are a common side effect with antipsychotics, lethal arrhythmia is rare and often associated with other preexisting medical problems [38]. As a result, extra care should be taken when treating agitated patients with congenital prolonged QTc syndromes or who use other medications that lengthen QTc intervals, both directly and indirectly [29].

The use of antipsychotics in people over 65 is associated with a slightly but significantly higher general mortality rate. It is unclear whether D2 blockers cause increased mortality or whether other mortality causes prompt agitation or violent behavior for which the medications were prescribed [39]. Again, caution when prescribing antipsychotics for treatment of aggressive and violent behavior in older adults is warranted.

Benzodiazepines (e.g., alprazolam, clonazepam, diazepam and lorazepam) can relieve the stress and anxiety associated with feeling out of control. These medications can be used alone to decrease agitation in the ED [29], or they are used to boost the effectiveness of antipsychotic intervention; co-administering a low dose of a benzodiazepine and antipsychotic can decrease the total antipsychotic dose necessary to treat agitation [35]. The primary risk of benzodiazepines is disinhibition, which can then exacerbate agitation or violent behavior [29]. There is also the serious risk of respiratory depression when benzodiazepines are given in high doses or when used in combination with other sedatives, including alcohol and some illicit drugs [29].

Anticholinergic medications are used to counteract the acute neuromuscular side effects of antipsychotic medications administered to treat agitation and aggression. A single dose of anticholinergic administered as part of the initial “cocktail” can be useful [35]. Undesirable side effects of anticholinergics include dry eyes, dry mouth and constipation (dry stool). More seriously, anticholinergics can induce closed-angle glaucoma, which, while uncommon, is potentially blinding. This condition is usually immediately symptomatic (eye pain, redness in the white of the eye and pupillary enlargement) and remits with prompt treatment [40].

Agitated patients who are not psychotic and are cooperative could be started on an oral dose of lorazepam [29,35,41]. Lorazepam has a shorter elimination half-life than many other benzodiazepines, which limits the risk of excessive sedation due to the cumulative effects of the drug. Patients who are agitated in the context of psychosis, but are still cooperative, could be treated with a combination of oral lorazepam and an oral antipsychotic [29,35].

If a patient is imminently violent and not psychotic, but does not cooperate with oral therapy, or if oral therapy is not a proportionate response, a combination of an intramuscular antipsychotic and an intramuscular benzodiazepine (haloperidol and lorazepam) is recommended [29]. Haloperidol is one of the fastest acting of all the injectables, reaching peak plasma level after about 20 min [42]. When using intramuscular haloperidol, an anticholinergic should be given immediately (per manufacturer’s recommendations) to reduce the risk of neuromuscular effects. Any anticholinergic agent (e.g., benztropine or trihexyphenidyl) could serve in this role, but diphenhydramine (an anticholinergic with antihistamine properties) has the additional beneficial effect of sedation [29]. If the patient’s clinical response to the haloperidol, lorazepam and anticholinergic combination is inadequate after 1 hour, the clinician can use another dose of the injection, repeating it every hour until violence control is achieved [29].

If a patient is imminently violent and psychotic, intramuscular olanzapine or ziprasidone may be used [33,35,36]. However, olanzapine should never be used to treat agitation in patients with dementia due to increased risk of stroke and death [43]. Also, intramuscular lorazepam should not be given within 1 hour of intramuscular olanzapine [29].

Intravenous administration of benzodiazepines or haloperidol should not be used except in very extreme circumstances. The aforementioned medications should never be mixed in the same syringe, nor should two drugs of the same class be used to treat aggressive and violent behavior. Extra care should be taken when treating patients with metabolic disorders (e.g., hypo- and hyperthermia) or who have suffered extreme physical exertion. Clinicians should also be alert to the potential for interactions with other medications or illicit substances, or with underlying physical disorders, particularly renal, hepatic, cardiovascular or neurological conditions [29].

Restraints of all kinds are the intervention of last resort. Clinicians must make every effort to defuse agitation and violence without them. However, if seclusion is necessary, with or without physical restraints, patients should *never* be left alone and should *always* receive continuous one-to-one attention. Patients should be monitored “within eyesight” of an appropriately trained individual. Once the patient has appropriately calmed down, seclusion should be terminated.

Whatever the risks of pharmacological management of aggressive or violent behavior in the ED, the likelihood of mortality from acute use of these medicines appears to be extremely small. In those situations that represent a high immediate risk of physical injury, aggressive use of medicine is justified, and the benefits clearly outweigh the risks.

6. Summary and recommendations

Several studies support the link between training and a decrease in violence by patients [13,44], but it is unclear whether the desired outcome is a direct or indirect result of such trainings. For example, Ryan et al. [44] found a cascade-type indirect effect; after violence management training, institutional staff felt more supported by the administration and less anxious, and that in turn was communicated to the patients who also became less anxious, which resulted in an overall decline in the number of assaults. Similarly, Palmstierna and Wistedt [21] found that institutions with the lowest frequency of violent incidents have the most well-educated staff members.

Identifying violence is as important as reacting to events that are already under way. Assessment training also decreases the incidence of violent behavior. Risk assessments can lead to objective improvements in clinical documentation and enhanced self-confidence in assessment skills [44].

Violent behavior in patients continues to be a pressing concern for new and veteran clinicians in the ED. There has been progress in this arena since the original Tishler et al. paper, but there is still a need for additional research. First, clear policies and procedures should address how to respond to and report violent patient behavior. Clinicians should feel supported in their ability to assess and react appropriately, without fear of negative reprisals by other staff members or administrators.

Violence assessment and management topics should be included in trainings and continuing education for new and experienced ED clinicians. Didactic trainings should highlight different techniques for assessing and responding to violent behavior. Clinicians should practice multiple techniques in order to feel comfortable switching strategies in their “treatment toolbox.” Since most clinicians fall back on familiar skills, it is especially important to design trainings where participants practice responses that expand their comfort zones.

Finally, additional investigation of the best type of training in violence risk assessment and intervention for the ED is imperative. Creating a universal training package that is relevant to the unique features of all ED settings is unlikely. However, designing “best practices” training that can be modified by local policies and procedures will assure that clinicians are well prepared to handle this type of behavior when it arises.

After a violent situation occurs, we recommend at least one staff meeting to review, discuss and digest the clinical aspects of what happened. Depending on the extent and severity of the event, more than one meeting may be needed to review the situation and determine what could or should have been done differently, and whether attitudes and behaviors of the staff contributed to calming the violent situation or escalating it. It is likely helpful to include hospital security or police officers who are involved in ED services in these meetings and a staff psychiatrist or psychologist who has had training in violent situations as consultants during the meeting.

Training should occur early in the careers of medical and graduate students and hospital personnel. Unfortunately, training in violence prevention and management is often reactive rather than proactive and often occurs after a serious sentinel event such as an assault has already taken place.

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