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General Hospital Psychiatry 26 (2004) 42–49

General Hospital Psychiatry

Use of restraints and pharmacotherapy in academic psychiatric emergency services

Michael H. Allen, M.D.[a,*], Glenn W. Currier, M.D., MPH[b]

[a]*University of Colorado School of Medicine, Denver, CO, USA*
[b]*University of Rochester Medical Center, Rochester, NY, USA*

Received 3 January 2003; accepted 12 August 2003

Abstract

Psychiatric emergency services (PES) are an increasingly important component of mental health services. To assess the type and scope of services delivered in the PES setting, the American Association for Emergency Psychiatry sponsored an Expert Consensus Panel Survey of these services in 1999. The questionnaire was mailed to medical directors of PES facilities with 91% ($n = 51$) responding. More than 90% of the respondents were teaching sites. Restraints were reportedly used in a mean of 8.5% of presentations for a mean of 3.3 h per episode. Restraint utilization correlated with the percentage of psychotic patients treated, but not with a wide variety of other patient and service variables. Involuntary medications were used in 16% of cases, though in oral form in 29% of those cases. A large majority (94%) endorsed mild sedation permitting further assessment as the appropriate endpoint and rejected sleep or heavy sedation as an endpoint (82%). Benzodiazepines received the strongest endorsements and 82% indicated it would be appropriate to administer a benzodiazepine alone for agitation first and initiate antipsychotic treatment subsequently if appropriate. When there is no history of prior antipsychotic exposure, 60% favored a benzodiazepine alone. However, given a history of previous antipsychotic treatment, only 8% endorsed this strategy. Most respondents (78%) preferred to use oral medication for treating behavioral emergencies, whenever possible but 70.3% reported regular use of an IM combination of a benzodiazepine and high-potency typical neuroleptic when necessary. In addition to managing emergencies, 82% of services initiated standing medications for patients being admitted to hospital settings and 70% initiated regular medication treatments for patients being released to the community. Of patients started on oral antipsychotics, 42% received an atypical antipsychotic. Reflecting medication characteristics of particular importance in emergency settings, most respondents (92%) cited selective serotonin reuptake inhibitors as the preferred type of antidepressant, and divalproex or related compounds (90%) for treatment of bipolar disorder in the PES.

Keywords: Physical restraint; Psychiatric emergency services; Antipsychotic; Antidepressant; Mood stabilizer; Benzodiazepine; Agitation

1. Introduction

In recent years, psychiatric emergency services (PES) have become a major point of entry into the mental health system and a principal treatment site for many patients with chronic and severe mental illness [1,2]. This shift towards treatment rather than triage in crisis settings represents a relatively new phenomenon. In the early 1980s, a comprehensive review of services provided in psychiatric crisis response systems found that many emergencies were handled by walk-in crisis centers, and the staff of these centers did not typically prescribe medications [3]. Particularly before Diagnostic and Statistical Manual of Mental Disorders (DSM)-III and -IV, assessment was often limited. As a result, diagnosis in emergency rooms tended to be imprecise [4], and medication initiation was usually deferred to inpatient treatment providers. The medications available at that time were also more toxic and required greater premedication medical assessment. At that stage in PES development, the scope of services was limited to crisis intervention and disposition [1,5,6]. This has been described as the triage model [7].

Since that time, the philosophical, legal, and financial environment has changed, and one major goal of emergency services is now diversion from hospital admission, whenever possible. To accommodate this broader mandate, PESs are now complex, organizationally unique services with a variety of resources that can include outreach teams, obser-

* Corresponding author. Tel.: +1-303-315-9883; fax: +1-303-315-9570.
E-mail address: michael.allen@uchsc.edu (M.H. Allen).

0163-8343/04/$ – see front matter © 2004 Elsevier Inc. All rights reserved.
doi:10.1016/j.genhosppsych.2003.08.002

vation beds, and community-based crisis and residential beds. Reliability of psychiatric diagnosis in emergency settings has been shown to be moderate to excellent for many diagnostic categories [8,9]. This approach to emergency services, characterized by more precise diagnosis, initiation of treatment in the emergency setting, and transfer to a lower level of care, has been described as the treatment model [2]. This model is in part possible because of the introduction of safer, more tolerable psychotropic drugs (including new antidepressants, mood stabilizers, and atypical antipsychotics), which require less intensive premedication assessment, titration, and monitoring. Although originally driven by necessity, this approach also has many benefits. Immediate initiation of treatment may promote more rapid symptom control, reduce use of restraint and seclusion, and shorten length of stay for those patients who are admitted [2].

While the role of the PES in the system of care has evolved, no systematic assessment of modern PES settings or practices has been conducted. To characterize such services, we report results of a survey of PES directors conducted under the auspices of the American Association for Emergency Psychiatry (AAEP), the subspecialty organization for emergency psychiatry. The goal of this detailed survey was to describe PES settings, staffing, and clinical practices, including the pharmacologic and nonpharmacologic strategies used in common emergency presentations. A companion article has described the settings, staffing, scope of practice, etc. [10]. This report focuses on data related to physical restraint and pharmacologic treatments.

2. Methods

The Expert Consensus Panel Survey of Psychiatric Emergency Services was created by senior members of the AAEP currently in practice. This working group identified key issues in the field, and these were translated into a 70-item questionnaire with 286 data points designed to gather a variety of descriptive data regarding psychiatric emergency services. A panel of 56 experts was selected to complete the questionnaire, chosen on the basis of membership in the AAEP and administrative responsibilities for a PES. These criteria were used to select for both experience in the emergency setting and access to relevant administrative data. The opinions of experts were sought as it has been estimated that only 15-20% of medical practices can be justified on the basis of rigorous data establishing their effectiveness [11].

The questionnaire was self-administered by respondents and encompassed a wide range of topics, such as medical and nonmedical interventions. Specific information was gathered on practice sites, patient characteristics, staffing, medical evaluation procedures, other clinical procedures, medication practices, and referral practices. Data collected were in the form of multiple-choice, yes/no, numerical, and unstructured written (e.g., "other-specify") responses. A sample of the questions appears in Table 1. Respondents were instructed to provide actual statistics as opposed to estimates for quantitative data. The survey was administered in late 1999, and data were requested for calendar year 1998, the last year for which complete data were available at that time. Some items inquired about common practices in their service and others about their own expert recommendations. This allowed for the collection of some data regarding usual care as well as what the panelists regarded as best practice. The final section of the questionnaire asked respondents to describe themselves.

Table 1
Sample survey questions

- On average in 1998, how many psychiatric evaluations and admissions were completed per month in your PES?
- Did your PES provide patient follow-up visits in 1998?
- In 1998, how many assaults of staff by patients occurred within your PES?
- For what percentage of patients served by your PES in 1998 was substance abuse thought to be the cause of the PES presentation?
- What percentage of patients were placed in mechanical restraints in 1998?
- Assuming no medical contraindication, if an acutely agitated and uncooperative patient does not have a history of past treatment with antipsychotics, which of the following is generally the more appropriate medication for treating him/her acutely?
  An antipsychotic
  A benzodiazepine
  Both medications (together)
  Either medication may be acceptable
  Neither medication

PES indicates psychiatric emergency service.

Several variables from the survey were stratified by catchment area size, and were categorized as small urban (500,000 or less), midsized urban (between 500,000 and 1 million), and large urban (greater than 1 million population). Parametric statistics were employed, including chi-squares for categorical data and t tests and analysis of variance (ANOVA) for continuous variables. Comparisons were limited to conserve sample size and avoid multiple comparisons. To examine factors affecting restraint utilization, variables found to be significant in univariate analyses were included in a stepwise multiple linear regression model. Statistical analyses were conducted using SAS software. Unless otherwise specified, statistical significance was determined at a level of $P < .05$.

3. Results

3.1. Respondents

Of the 56 PES directors invited to participate, 51 (91%) returned their questionnaires. Follow-up contact with 15 of the 51 respondents was attempted because of missing or

questionable data. Of these, 9 respondents could be contacted and data issues were resolved. For the remaining 6 respondents, individual items that could not be clarified were omitted.

The percentage of respondents who were board certified in psychiatry was 88%, with 10% having completed fellowship training in emergency psychiatry. The average time since completion of psychiatry residency was 14 years (range 3-36 years). The average length of time in the current position was 7 years (range 0-20 years). Seventy-seven percent of respondents considered emergency psychiatry to be a permanent career choice.

3.2. Practice sites

Data on the organization and functioning of these services including the type of services, hours, staffing, and so forth, have been reported elsewhere [10]. Briefly, 77% of respondents indicated that their PES was located in a general hospital. Of these, 66% of respondents noted that their PES was an autonomous facility not located within a medical emergency department. The majority (90%) of the PES facilities were university-affiliated training sites for medical students and residents. While a majority (74.5%) of sites indicated they had a locked area to prevent involuntary or violent patients from absconding, a significant majority (25.5%) lacked this important safeguard.

Respondents indicated that a mean (SD) of 400.7 (258.7) patients were evaluated per month, with a range of 90 to 1200. According to the survey data, the range of allowable length of patient stay was 8 h to 72 h, with a mean (SD) allowable length of stay of 27 (14) h. Actual length of patient stay ranged from 1 h to 48 h, with a mean (SD) patient stay of 9 (11) h.

Almost one-half of patients seen in the PES were reportedly enrolled in Medicaid or Medicare (45.4%). A large number had no insurance coverage of any type (36.4%). Only a small fraction were reportedly covered by private insurance plans (6.8%) elsewhere.

3.3. Effect of catchment size on responses

Catchment area sizes (population served) surveyed were distributed into thirds: 33.3% served a population of more than 1 million people (large urban), 31.4% served 500 000 to 1 million (midsized urban), and 35.3% served under 500 000 (small urban).

No significant differences among catchment sizes were found in the rates of assault on staff by patients (average 5.8 per year), human immunodeficiency virus (HIV) (8.0%), or the presence of significant comorbid medical illness (21.8%), substance abuse (25.2%), or percent of homeless patients seen (19.4%). The rates of various diagnoses reported are listed in Table 2. They did not vary significantly by catchment size.

Not surprisingly, the number of patients evaluated per month did increase as catchment size increased. In the smaller centers, a mean (SD) of 304 (206) patients were evaluated monthly. Mid or large urban facilities evaluated a mean (SD) of 367 (196) and 535 (312) patients, respectively ($F = 4.1$, $P<.02$). Admissions to inpatient services were reported at a mean (SD) of 181.9 (224.4) per month or 45% in 1998, with a range from 14 to 1200. Small and midsized catchments admitted a third while larger catchments admitted over one-half. Sites located in the smallest catchments admitted a mean (SD) of 104 (55) patients per month or 34%, suburban settings a mean (SD) of 127 (60) per month or 35%, and urban centers 312 (347) patients per month or 58% ($F = 4.8$, $P < .013$). When analyzed by 1-way ANOVA, significant differences did emerge in the following variables: Percentage of patients treated on an involuntary basis ($F = 3.2$, $P < .05$), and percentage of patients placed in physical restraints ($F = 3.2$, df = 2, $P < .05$).

Table 2
Survey Question: What percentage of patients served by your PES in 1998 could be classified in each of the following diagnostic groups?

Response: diagnostic group	Percent of PES patients mean (SD) $n = 47$
Psychotic disorder (including schizophrenia and schizoaffective)	28 (14)
Primary substance abuse	25 (18)
Major depression	23 (10)
Axis II disorder	22 (20)
Bipolar disorder	13 (7)
Other Axis I disorders	12 (9)
Dementia	5 (3)
No psychiatric disorder (required social services)	4 (4)

PES indicates psychiatric emergency service.

3.4. Patient characteristics

The percentage of patients arriving on involuntary status varied widely among facilities, with a mean (SD) of 37% (26%). Respondents were asked to classify patients into primary diagnostic groups. The results are shown in Table 2. The most common diagnoses in rank order were psychotic disorders (including schizophrenia and schizoaffective disorder), primary substance abuse, major depression, and personality disorders. Primary substance abuse was reported in 25% but substance abuse was reported to be a contributor in 40% of cases. Only 4% of patients were thought to have no psychiatric diagnosis, requiring only social services.

3.5. Treatments, procedures, and other clinical activities

PES now provide various levels of care. All manage emergencies but most also initiate routine treatments as well. The sections that follow address practices in specific situations in the PES.

3.5.1. Behavioral emergencies

When confronted with an acutely agitated, psychotic patient for whom medical history was unknown, a majority of respondents favored attempting the least invasive interventions first. However, significant numbers of respondents favored immediate administration of emergency medication (25%) and application of physical restraints (44%) before other less invasive interventions were attempted. The use of restraints was similar in PES located in smaller and mid-sized urban catchments, but it increased significantly in large urban areas. Restraints were used in a mean (SD) of 7% (5%) of patients in rural areas and 6% (6%) in suburban areas. Urban centers with populations greater than 1 million reported approximately twice the rates of restraint use (12.3%, SD 9.9) ($F = 3.2$, df = 2, $P < .05$). University-based programs used slightly more restraints (9.6%, SD 8.6) versus nonacademic sites (7.0%, SD 6.6), although this difference was not statistically significant ($F = 1.15$, df = 42, $P < .29$).

3.5.2. Danger and physical restraints

Given the concern about violence in PES, rates of interpersonal violence at the site were assessed in the survey. Respondents described high numbers of assaults by patients toward staff. The mean (SD) number of assaults per year at each site was 5.8 (7.7) (with a range of 0-35), of which 56.5% resulted in time lost from work. A 3-to-1 ratio of assaults against nursing staff relative to physicians was observed.

On average across all sites, 8.5% (SD 7.8) of patients were placed in restraint. The mean (SD) duration of restraint was 3.3 (2.9) h. At all sites surveyed, only licensed clinical staff could order restraints and seclusion, and application of restraints was predicated solely on acute danger to self and/or others. Ninety-six percent of respondents considered acute danger to self as an appropriate reason for physically restraining patients, and 100% considered acute danger to staff a valid reason. Respondents overwhelmingly disapproved of the use of restraints to prevent voluntary patients from leaving before assessment (94%) or to maintain an orderly environment (96%). However, responses were divided over using restraints to prevent an involuntary patient from leaving before assessment (48% considered restraints appropriate) or before transfer to a locked facility (58% considered them appropriate). Respondents were likewise divided when asked whether they agreed that restraints are usually necessary for violent patients (56% agreed) or that nonphysician staff pressure psychiatrists to order restraints for patients who might otherwise be manageable (46% agreed). About two-thirds said that having been restrained does not make patients less likely to return to the PES. However, the overwhelming majority agreed that most patients recall and have adverse reactions to restraints (94% and 92%, respectively).

Significant differences in the utilization of restraint across hospital settings has been described previously. A variety of patient and service characteristics potentially contributing to this variation such as patient demographics and diagnosis and hospital environment factors such as staffing and experience have been studied [12]. Similar data were obtained in this survey for emergency settings and variables found to be significant in univariate analyses were included in a forward stepwise multiple linear regression model. The only patient characteristic associated with increased restraint use by site was higher percentage of psychotic patients reported. A variety of other putative factors were not related to increased restraint use, including: 1) percentage of patients treated involuntarily; 2) numbers of evaluations performed per month; 3) percentage of recidivist patients; 4) number of assaults of clinical staff per year; 5) percentage of patients with Axis II disorders, or 5) rate of staffing with attending physicians, resident physicians, or nurses.

3.5.3. Pharmacotherapy for the agitated patient

Respondents were asked a variety of questions that attempted to ascertain both the usual practices of clinicians in their settings as well as their own expert recommendations. Thus, data were obtained that reflect both the dominant culture or standard of care in emergency settings and what might be termed best practices.

The endpoint for treatment of agitation supported by the vast majority of respondents (94%) was mild sedation permitting further assessment. Eighty-two percent of respondents rejected sleep or heavy sedation as an endpoint.

Respondents indicated that a mean (SD) of 16% (19%) of patients served at their site required involuntary medication for control of agitation. These medications were administered IM to a mean (SD) of 64% (32) of patients, PO to 29% (29), and IV to 1% (4). When surveyed about preferred routes of medication for control of agitation, 78% of respondents indicated a preference for oral medications over IM and IV formulations. Seventy-three percent preferred oral solution to tablet/capsule formulations.

Seventy-four percent of respondents reported following either a written or informal protocol for the pharmacologic management of agitation. Those respondents were asked in an open-ended question to specify the pharmacologic therapies used at their site. From the 44 interventions they provided, five overall strategies emerged: a high-potency typical antipsychotic plus a benzodiazepine, a high-potency typical antipsychotic plus a benzodiazepine and an anticholinergic, a high-potency typical antipsychotic alone, a benzodiazepine alone, and an atypical antipsychotic alone. The percentages of responses indicating use of each strategy are provided in Table 3. The majority of protocols (70%) involved a parenteral “drug cocktail” of a high-potency typical antipsychotic and a benzodiazepine.

Respondents were also asked their opinions of the utility of several individual drugs in hypothetical scenarios involving agitated patients. Recommendations for medicating agitated, uncooperative patients when no history is available are shown in Table 4. Medications were endorsed in the

Table 3
Current practice for the pharmacologic management of agitation in patients without history

Strategy	Percent of Protocols Reflecting Practice
High-potency typical antipsychotic and benzodiazepine	36.4
High-potency typical antipsychotic plus benzodiazepine and anticholinergic	34.1
Benzodiazepine alone	15.9
High-potency typical antipsychotic alone	6.8
Risperidone alone	4.5

following order: benzodiazepines IM (94%) or PO (90%), high potency conventional such as haloperidol IM (80%) or PO (78%), atypical antipsychotic (available only in oral form at that time, 72%). With no history of prior exposure to antipsychotics, 60% recommended a benzodiazepine alone. However, for patients with a known history of prior antipsychotic treatment, there was more support for the immediate use of antipsychotics with 10% endorsing antipsychotic alone and 44% recommending a combination with a benzodiazepine. Only 8% recommended the use of a benzodiazepine alone in this situation. However, 81.6% indicated it would be appropriate to begin with a benzodiazepine alone and initiate an antipsychotic subsequently in the context of informed consent dialog.

Though standard practice at one time, 92% of respondents indicated that they would not recommend the use of a low-potency, IM antipsychotic such as chlorpromazine. Opinions regarding droperidol, even before recent US Food and Drug Administration warnings, were divided; 18% of respondents reported that they would highly recommend use of the drug, while 53% indicated that they would not recommend it or would not use it at all.

Table 4
Response to the Survey Question: If an agitated, hostile patient has no prior records available and is unwilling/unable to provide a history, to what extent would you recommend using each of the following medication strategies?

Medication	Percent of respondents who would:		
	Not use at all	Not recommend	Recommend
PO high-potency antipsychotic	8	14	78
IM high-potency antipsychotic	8	12	80
IV high-potency antipsychotic	54	22	24
PO low-potency antipsychotic	28	56	16
IM low-potency antipsychotic	48	44	8
IV low-potency antipsychotic	76	20	4
PO atypical antipsychotic	8	20	72
PO benzodiazepine	2	8	90
IM benzodiazepine	4	2	94
IM droperidol	31	22	47

PO indicates oral; IM, intramuscular; IV, intravenous.

For medication of young, healthy patients, 76% of respondents preferred to give repeated lower doses of conventional antipsychotics (e.g., haloperidol 2-5 mg every 30 min) rather than a single high dose (e.g., haloperidol 10-20 mg). Seventy-six percent of respondents indicated they generally prescribe anticholinergics at time of discharge from the PES to patients who have received a large dose of typical antipsychotic agents.

3.5.4. Complicating conditions

Survey participants varied in their use of antipsychotics and benzodiazepines in patients with a variety of medical conditions, such as pregnancy, brain damage, acute mania, or mental retardation. Responses are summarized in Table 5. Sixty-six percent of respondents reported having seen cases of behavioral disinhibition apparently triggered by benzodiazepines.

3.5.5. Routine care

When questioned about services provided in their PES, 82% indicated that they routinely initiate new medications for patients being admitted to hospital, and 70% initiated medications for patients being released.

Schizophrenia and schizoaffective disorder accounted for 28% of visits. For patients started on an oral antipsychotic, respondents indicated 42% received an atypical antipsychotic at the time of the survey.

Major depression accounted for 23% of visits. Only three respondents (5.9%) stated that antidepressants are not started or rarely started in their PES. Selective serotonin reuptake inhibitors (SSRIs) were cited by 92.2% of respondents as the most frequently chosen agents. One respondent reported using bupropion most often. Safety in overdose was cited by 53.1% of respondents as the most important factor considered in selecting these agents. An additional 45% cited rare, intolerable adverse effects or common, mild adverse effects as the most important criteria when selecting antidepressant medication.

Bipolar disorder was cited as the diagnosis for 13% of PES patients. Ninety percent of survey participants indicated that valproic acid or divalproex (Depakote™) were the most frequently selected mood-stabilizing agents in their facility. The remainder selected lithium (8%) or other medications (2%) as the medication of choice in this situation. The most important factors in selecting a mood stabilizer were simple dosing (37.5%), low rate of common adverse effects (22.9%), speed of onset (20.8%), and low rate of intolerable adverse effects (10.4%). Only 9.8% reported having seen cases of mania ensuing shortly after initiation of an atypical antipsychotic agent.

4. Discussion

The results of the AAEP survey provide evidence in support of the changing role of the PES from a model

Table 5
Response to the Survey Question: Which classes of medication, if any, would you be *reluctant* to use for each of the following medical conditions?

Response:	Percent of Respondents Reluctant to Use:		
Medical condition	Benzodiazepines	Conventional antipsychotics	Atypical antipsychotics
Chronic obstructive pulmonary disease	80	12	2
Mental retardation or developmental delay	28	16	4
Brain damage	53	20	2
Suspected sedative/hypnotic intoxication	90	22	20
History of sedative hypnotic abuse	82	0	0
Frail old age	67	35	12
Acute mania	2	2	14
Stimulant intoxication	4	16	16
Delirium (unknown etiology)	57	31	37
History of tardive dyskinesia	2	78	2
History of allergic reactions to high-potency neuroleptics	0	94	10
History of extra-pyramidal symptoms	0	73	8
Pregnancy	69	43	61

emphasizing limited evaluation, containment, and referral [12] to a treatment model, including rapid diagnosis and definitive treatment. A large majority of respondents indicated that medications are initiated routinely for patients both admitted to, and released from, their facilities.

With the exception of substance abuse the common emergencies handled in the PES have not changed significantly during this decade. In a 1993 study of psychiatric response systems, long-term mental illness provided the most common crises (36%), and depression/suicide constituted the next largest group (29%) [3]. These findings are consistent with those of this survey. Difficulty handling patients with hostile, aggressive, combative, or potentially violent behavior was frequently cited in both studies [3]. A shift was seen in the number of substance abuse crises. According to the 1993 study, 19% of presentations were primarily related to substance abuse [3]. Respondents in the current study indicated substance abuse in 40% of cases, over twice the proportion in the 1993 study. This is problematic given the separation of mental health and chemical dependency treatment programs in many areas, limiting timely access of PES patients to appropriate services.

These findings also underscore the unfortunate fact that violence toward staff is too frequent in the PES. Nonetheless, restraint and involuntary medication are viewed as a last resort and are utilized with relatively low frequency in the sites we surveyed. Recent policy statements such as that of the National Association of State Mental Health Program Directors [14] and regulations such as those of the Centers for Medicare and Medicaid Services (formerly the Health Care Financing Administration) [15] suggest that physical restraints and "chemical restraints" are not treatments but purely security measures. Way and Banks have reported in a large review of inpatient restraint and seclusion practices that institutional culture rather than patient characteristics accounts for differences in utilization [16]. The responses of this panel suggest that the use of physical restraints was primarily based on a patient's danger to self or to others, was ordered only by professional staff, and occurred in a minority of all cases in most of the facilities surveyed. The vast majority of respondents indicated that maintaining an orderly treatment environment is *not* an appropriate reason for use of physical restraints. Although restraints were applied more frequently in large urban settings, the only patient or service characteristic examined that proved predictive of restraint use was the frequency of psychotic presentations. These findings suggest broad support among emergency psychiatrists for the thrust of recent regulatory changes. Reports have appeared that suggest the benefits of staff education and de-escalation techniques in reducing restraint use [17]. However, Wright [18] and Sailas and Fenton of the Cochrane Database Systematic Reviews [19] have noted the paucity of rigorous data on strategies for reducing the use of physical restraint.

The PES is a fast-paced setting, as seen in the relatively short length of stay reported in this survey. This is consistent with rapid diagnosis, initiation of treatment, and transfer of responsibility [12]. Despite the compressed time frame, the new PES model provides a significantly wider spectrum of care than does the older triage model. High-intensity care, increased variety of services, flexible utilization of resources, and continuity of care are critical components of these new facilities [12].

Routine treatment with medications in the PES is a relatively new practice, made possible by the emergence of drugs that are safer to use. Drugs that can be initiated in the PES setting need to have a low burden of premedication medical assessment, a low rate of serious side effects, low risk of serious toxicity in the event of overdose and, consequently, may be prescribed in situations where aftercare is less certain. Agents with these characteristics for a variety of psychiatric conditions are increasing the ability of the PES to begin safe and effective treatment rapidly in these settings.

In the past, PES physicians first turned to single high-potency typical antipsychotics for treatment of agitated patients. Current practice often involves a combination of a traditional antipsychotic and a benzodiazepine and to the degree that respondents reported the use of a standard protocol for the management of agitation, most indicated that this was the practice in their service. This "cocktail" has been shown to have an acceptable safety and efficacy profile [20]. The evidence base for these practices has been extensively reviewed by one of the authors elsewhere [21]. While the combination is a well-established practice, the experts indicated by a wide margin that mild sedation is the appropriate endpoint, benzodiazepines received the strongest ratings overall and, in the absence of prior antipsychotic exposure, most endorsed a benzodiazepine alone for the management of agitation. It is worth noting that consumers also prefer benzodiazepines to antipsychotics [22].

Despite the current widespread use of the typical-antipsychotic–benzodiazepine combination, the advent of new, atypical antipsychotic agents has begun to alter practice in the PES. The atypical antipsychotics generally offer improved efficacy and adverse-effect profiles over conventional antipsychotic medications over time. Indeed, most survey participants indicated that they would recommend the use of the atypical antipsychotics. At the time of this survey, two IM atypical agents, olanzapine and ziprasidone, were in clinical trials but were not clinically available [23,24].

Even though in practice most respondents administered IM conventional antipsychotics for the control of agitation in patients being medicated involuntarily, most indicated a preference for oral medications. Respondents also preferred liquid preparations to tablets. IM preparations may be more commonly used because of concern about delayed onset of action with oral agents, particularly tablets as well as compliance issues. Oral solutions may offer advantages over tablets in speed and reliability [11]. One study has suggested that risperidone oral solution plus oral lorazepam is a safe and effective alternative to IM haloperidol plus IM lorazepam in patients with acute psychotic agitation. That study found that the onset of action with the oral combination was similar to that of the IM combination [25]. Additional studies are needed to evaluate the role of atypical antipsychotics in this setting.

Antidepressants are often prescribed in the PES, with SSRIs being the most widely used. The results of this survey suggest a preference for agents that are easy to use. Safety is a major concern in the choice of antidepressants, and safety in overdose was identified as the single most important factor in antidepressant selection. Ease of use and tolerability may also explain the overwhelming preference for valproic acid or divalproex over lithium for bipolar patients in emergency settings.

The study had several limitations. The sample drew heavily on the membership of the AAEP and as such represents a convenience sample. The membership of AAEP is largely comprised of clinical faculty and their sites are teaching sites. Efforts to contact appropriate individuals in nonacademic settings have been much less successful. This has the advantage of adding to the qualifications of the expert panel and the strength of resultant recommendations. However, this selection bias also limits the generalizability of these findings as a description of current emergency service organization and function.

Expert consensus efforts have been criticized because the composition of a panel can determine the outcome with different panels achieving different outcomes [11]. Of course, this is true of randomized controlled trials and meta-analyses, also. Participants in this survey were not randomly selected from a pool of qualified candidates. Rather all individuals meeting the screening criteria were invited to participate and the response rate was quite high.

The specification of clinical scenarios also contributes to variability in the development of appropriateness criteria. Likewise, generalizability of our results is constrained by the specificity of the situations described.

To the extent that objective data were requested, respondents may have provided estimates of values in lieu of actual data which may been unavailable. To the extent that personal data such as their own practices or opinions was requested, the findings are subject to recall error, social desirability and other problems of self-report methodology [26].

Future studies should broaden the scope of PES settings surveyed to include facilities that are not academic centers. This will provide a description of more common practices in typical PES environments. Further study of the use of medications in the PES setting is warranted. Questions that identify barriers to treatment in the PES should be included in future surveys. This work could lead to more detailed algorithms for the management of agitation and other common emergencies.

5. Conclusions

Although the types of cases presenting in the PES environment have remained relatively stable over the past decade, new methods of treatment have resulted in the evolution of the PES into organizationally unique treatment facilities. Psychiatrists routinely initiate treatment for psychotic disorders, depression and bipolar disorder in the PES setting. Given the relatively high rates of staff assaults seen in the PES, use of restraints appears to be largely patient-focused and appropriate. Physicians surveyed often rely on IM agents and conventional antipsychotics for treatment of the agitated patient, even though they generally prefer oral agents and atypical antipsychotics. Further investigation of new agents in the PES may help to remove barriers to treatment and improve care in emergency settings.

Acknowledgments

These data were presented in part at the 10th Biennial Winter Workshop on Schizophrenia, February 5th through 11th, 2000, Davos, Switzerland and in part at the American Psychiatric Association 51st Institute on Psychiatric Services, October 29th through November 2nd, 1999, New Orleans, LA. Research was funded by Janssen Pharmaceutica, Inc. The authors wish to thank Amy Grogg, Ph.D. of Janssen for her assistance with this project.

References

[1] Gerson S, Bassuk E. Psychiatric emergencies: an overview. Am J Psychiatry 1980;137:1–11.
[2] American Psychiatric Association Task Force on Psychiatric Emergency Services. Report and Recommendations. http://www.psych.org/downloads/EmergencyServicesFinal.pdf. Accessed November 2003.
[3] Stroul BA. Psychiatric crisis response systems: a descriptive study. Community Support Program Center for Mental Health Services 1993;9-51.
[4] Lieberman PB, Baker FM. The reliability of psychiatric diagnosis in the emergency room. Hospital and Community Psychiatry 1985;36: 291–3.
[5] Hankoff LD, Mischorr MT, Tomlinson KE, et al. A program of crisis intervention in the emergency medical setting. Am J Psychiatry 1974; 131:47–50.
[6] Schwartz DA, Weiss AT, Miner JM. Community psychiatry and emergency service. Am J Psychiatry 1972;129:710–15.
[7] Barton GM, Friedman R, editors. Psychiatric emergency care: a task force report of the American Psychiatric Association. Washington, DC: 1983.
[8] Warner MD, Peabody CA. Reliability of diagnoses made by psychiatric residents in a general emergency department. Psychiatric Serv 1995;46:1284–6.
[9] Robins E, Gentry KA, Munoz RA, et al. A contrast of the three more common illnesses with the ten less common in a study and 18-month follow-up of 314 psychiatric emergency room patients. Arch Gen Psychiatry 1977;34:285–91.
[10] Currier GW, Allen MH. Organization and function of academic psychiatric emergency services. Gen Hosp Psychiatry 2003;25: 124–9.
[11] Shekelle PG, Kahan JP, et al. The reproducibility of a method to identify the overuse and underuse of medical procedures. N Engl J Med 1998;338:1888–995.
[12] Fisher WA. Restraint and Seclusion: a review of the literature. Am J Psychiatry 1994;151:1584–91.
[13] Allen MH. Definitive treatment in the psychiatric emergency service. Psychiatr Q 1996;67:247–62.
[14] Medical Directors Council of the National Association of State Mental Health Program Directors. Reducing the use of seclusion and restraint. Part II: Findings, principles and recommendations for special needs populations. Available at: http://www.nasmhpd.org/seclusion_restraint_2.html. Accessed July 6, 2001.
[15] Health Care Financing Administration. Hospital conditions for participation for patients' rights. 42CFR 482.13. Available at: http://www.hcfa.gov/quality/4b2.htm. Accessed June 25, 2001.
[16] Way B, Banks S. Use of seculusion and restraint in public psychiatric hospitals: patient characteristics and facility effects. Hospital and Community Psychiatry 1990;41:75–81.
[17] Chabora N, Judge-Gorny M, Grogan K. The Four S Model in action for de-escalation. An innovative state hospital-university collaborative endeavor. J Psychosoc Nurs Ment Health Serv 2003;41(1):22–8.
[18] Wright S. Control and restraint techniques in the management of violence in inpatient psychiatry: a critical review. Med Sci Law 2003;43(1):31–8.
[19] Sailas E, Fenton M. Seclusion and restraint for people with serious mental illness. Cochrane Database Systematic Reviews 2(CD001163): CD001163, 2000.
[20] Battaglia J, Moss S, Rush J, et al. Haloperidol, lorazepam, or both for psychotic agitation? A multicenter, prospective, double-blind, emergency department study. Am J Emerg Med 1997;15:335–40.
[21] Allen MH. Managing the agitated psychotic patient: a reappraisal of the evidence. J Clin Psychiatry 2000;61(Suppl 14):11-20.
[22] Allen MH, Caprenter D, Sheets JL, et al. What do consumers say they want and need during a psychiatric emergency? J Psychiat Pract 2003;9(1):39-58.16.
[23] Daniel DG, Potkin SG, Reeves KR. Intramuscular (IM) ziprasidone 20 mg is effective in reducing acute agitation associated with psychosis: a double-blind, randomized trial. Psychopharmacology 2001; 155:128–34.
[24] Taylor CC, Meehan K. The efficacy of a rapid-acting intramuscular formulation of olanzapine for positive symptoms. J Clin Psychiatry 2001;62(Suppl 2):22–4.
[25] Currier GW, Simpson GM. Risperidone liquid concentrate and oral lorazepam versus intramuscular haloperidol and intramuscular lorazepam for treatment of psychotic agitation. J Clin Psychiat 2001; 153-7.
[26] Palmer RF, Graham JW, Taylor B. Construct validity in health behavior research: interpreting latent variable models involving self-report and objective measures. J Behav Med 2002;25(6):525–50.