Evaluation and Treatment of Agitation

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Disclosures – Dr. Zun

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  - Chair, Coalition for Psychiatric Emergencies
  - Past President, American Association for Emergency Psychiatry
  - Professor, Department of Emergency Medicine and Psychiatry, RFUMS/Chicago Medical School
Learning Objectives

- To understand the medical clearance process
- To use protocols in the evaluation of the psychiatric patients
- To understand the role of verbal de-escalation in the treatment of psychiatric patients
- To improve the choice of treatment modalities for psychiatric patients in the emergency setting
Case #1

- 64 year old female is brought to the hospital for manic behavior. Patient has multiple medical problems but no prior psychiatric history.

- What further information is needed?
- What to look for in the physical exam?
- What testing is indicated?
Case #2

- 36 year old male with schizophrenia was brought in by the family because he stopped taking his medication and is getting violent at home.
- What further information is needed?
- What to look for in the physical exam?
- What testing is indicated?
Consensus Guidelines on Medical Evaluation


- Identify potential causative factors for behavior
- Further eval for new onset, advanced age, cognitive deficit, +ROS, substance intox or withdrawal, use appropriate term for medical clearance.
- Universal screening of vital signs, PE, assessment of mentation.
- Directed lab testing
- Work cooperatively with psych facility
Medical Clearance

Purpose

- **Primary Purpose** - To determine whether a medical illness is causing or exacerbating the psychiatric condition.

- **Secondary Purpose** - To identify medical or surgical conditions incidental to the psychiatric problem that may need treatment.
Primary Purpose

Etiology

- Drug and alcohol intoxication or withdrawal
- Medical
  - Hypoglycemia
  - Hyperthyroidism
  - Delirium
  - Head Trauma
  - Temporal Lobe Epilepsy
- Psychiatric
Mortality Rate of Delirium


- ED incidence 7-20%
- Frequently missed
  - 24% maximum detection rate
  - Due to lack of screening
- High rate of mortality
  - 36% vs. 10%
- High rate of morbidity
  - High rate of incontinence, decubitus, malnutrition
Primary Purpose - Differentiate Medical from Psychiatric Etiology

- History
- Physical exam
- Mental status examination
- Cognitive assessment
- Laboratory testing?
Secondary Purpose - Incidental Medical Problems

What is the patient’s concomitant problems?
- Retrospective review of 300 patients
- 178 had medical problems and 122 did not
- Most common hypertension, asthma and diabetes

What are the capabilities of the receiving facility?
- Assessments
  - Monitor vital signs & glucose
  - Routine neurological monitoring
  - Laboratories and radiographics
- Treatment
  - Intramuscular and subcutaneous injections
  - Insertion and maintenance of urinary catheters
  - Oxygen administration
Substance Use by Chronic Mentally Ill


- 44% current substance users
- 29% history of substance use
- 27% had little or no substance use history
What part of the evaluation is useful?


- Retrospective, observation study of psychiatric patients over 2 month period
- 352 patients with 19% having medical problems
- Sensitivity
  - History 94%
  - Physical exam 51%
  - Vital signs 17%
  - Laboratory testing 20%
History

Is the patient reliable?


- Patients asked about drug and alcohol use
- Patients had alcohol and toxicological screening
- Reliability of patients self-reported history

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<thead>
<tr>
<th></th>
<th>Sensitivity</th>
<th>Specificity</th>
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<tbody>
<tr>
<td>Drugs</td>
<td>92%</td>
<td>91%</td>
</tr>
<tr>
<td>ETOH</td>
<td>96%</td>
<td>87%</td>
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</table>
Formal Mental Status Examination

- Elements routinely assessed while interviewing pt
  - Appearance, behavior and attitude
  - Mood and affect

- Not routinely assessed while interviewing pt
  - Disorders of thought-Suicidal & homicidal ideation, ?admit
  - Insight and judgment-Knowledge about illness
  - Disorder of perception-Hallucinations & delusions
  - Sensorium and intelligence-Cognitive impairment, ?delirium
Clock Drawing Test

- Preferred as a screening test
- Self-administered and takes a short time to complete.
- The Clock test is scored on a six point scale from no errors to no reasonable representation of a clock.
- Patients with a score of one or two are considered without impairment and those with three or great have cognitive impairment.
Who Needs Testing and What Tests?

- What labs are done?
  - CBC, lytes, UDS, ETOH, UCG
  - Evidence that routine labs rarely change clinical management
  - Drug screen, alcohol level
    - One indication - Altered mental status without etiology
- When is more advanced testing indicated?
  - EEG, EKG, CT Scan Head, Chest radiograph
- Which patients?
  - All comers
  - Chronically mental illness with same presentation
  - New onset
Are Routine Labs Indicated?


ACEP Guidelines

- Routine laboratory testing of all patients is of very low yield and need not be performed.
- In adult ED patients with primary psychiatric complaints, diagnostic evaluation should be clinically directed by the history and physical examination.

APA Guidelines

- Psychiatrist may need to request or initiate further general medical evaluation to address diagnostic concerns that emerge from the psychiatric evaluation.
- “Psychiatrists and emergency physicians sometimes have different viewpoints on the utility of laboratory screening.”
Are drug and alcohol testing indicated?

- “Routine urine toxicologic screens for drugs in alert, awake, cooperative patients do not affect ED management and need not be performed…” (ACEP Guideline)
- “The patient’s cognitive abilities, rather than a specific blood alcohol level, should be the basis on when the clinicians begin the psychiatric assessment.” (ACEP Guideline)
- Intoxication is a clinical diagnosis; not a lab diagnosis
  - Level of consciousness
  - Cognitive function
  - Neurologic function
    - Coordination
    - Gait
    - Nystagmus
Which patients?

Psych history vs. new onset


- 100 consecutive patients aged 16-65 with new psychiatric symptoms.
  - Patients with fever received CT and LP
  - 63 of 100 had medical etiology for their symptoms
    - History in 27
    - PE in 6
    - CBC in 5
    - SMA-7 in 10
    - CPK in 6
    - ETOH and drug screen in 28
    - CT scan in 8
    - LP in 3.
  - Patients need extensive laboratory and radiographic evaluations including CT and LP.
When is Testing Indicated?

- Red flags of medical etiology
  - Age >45 years old
  - Exposure to toxins or drugs
  - Substance intoxication or withdrawal
  - No prior psychiatric/medical history
  - Abnormal vital signs
  - Cognitive deficits
  - Focal neurologic findings
  - Slurred speech
  - Seizures

- New onset of psychiatric symptoms
- Accommodating psychiatric facility
How do we reconcile the differences in the literature? Protocol for the Emergency Medicine Evaluation of Psychiatric Patients:


**Medical Clearance Checklist**

1. Does the patient have new psychiatric condition?  
   - Yes  
   - No

2. Any history of active medical illness needing evaluation?  
   - Yes  
   - No

3. Any abnormal vital signs prior to transfer?  
   - Yes  
   - No

4. Any abnormal physical exam (unclothed)?  
   - Yes  
   - No

5. Any abnormal mental status indicating medical illness?  
   - Yes  
   - No

If no to all of the above questions, no further evaluation is necessary.

If yes to any of the above questions, tests may be indicated.
SMART Medical Clearance


- Suspect new onset
- Medical conditions requiring screening?
  - DM, pregnancy, others
- Abnormal
  - Vital signs, mental status, physical exam
- Risky presentations
  - Age <12 or >55, Ingestion, Eating disorder, Alcohol withdrawal, Ill appearing, injury or found down
- Therapeutic blood levels – Li, phenytoin, valproate, lithium, dig, warfarin
The Term “Medically Clear”


- Poor documentation of medical examination of psychiatric patients
  - 298 charts reviewed in 1991 at one hospital
  - Physician deficiencies was mental status in 20%
  - Term “medically clear” documented in 80%

- Tintinalli states the term “Medically Clear” should be replaced by a discharge note
  - History and physical examination
  - Mental status and neurologic exam
  - Laboratory results
  - Discharge instructions
  - Follow up plans

- Other use the term “medically stable”
Case #1 64 year old female is brought to the hospital for manic behavior. Patient has multiple medical problems but no prior psychiatric history.

- **What information is needed?**
  - Prior psychiatric history - none
  - History of medical problems – DM, HTN, CVAs
  - Use of drugs and alcohol - Denies

- **What to look for in the physical exam?**
  - Vital signs – tachycardia & hypertensive
  - Focal deficits – right sided weakness
  - Signs of intoxication – Heightened consciousness

- **What testing is indicated?**
  - CBC, electrolytes, thyroid, UDS, alcohol level
  - EKG, CT scan head, CXR
Case #2 36 year old male with schizophrenia was brought in by the family because he stopped taking his medication and is getting violent at home.

What information is needed?
- Prior psychiatric history - Yes
- History of medical problems – noncontributory
- Drug and alcohol use – admits to alcohol

What to look for in the physical exam?
- Vital signs – normal
- Mental status exam – auditory hallucinations
- Physical exam – unremarkable
- Signs of intoxication – none

What is testing is indicated? None

He now becomes more agitated
- What is the treatment of choice?
Agitation Assessment
How is Agitation Assessed and Graded?

“I know it when I see it”

Tools

- Agitated Behavior Scale
  - 14 item observation of behavior from absent to present to an extreme degree

- Overt Aggression Scale
  - Assesses verbal aggression, physical aggression against objects, self, other people and interventions

- Richardson Agitation Sedation Scale
  - Scored from combative to unarousable based on observation

- PANSS (Positive and Negative Syndrome Scale)
  - Hostility, uncooperative, impulsivity, tension & excitable
  - Used in clinical trials
Pilot Study of Self Reported Level of Psychic Pain and Agitation

LS Zun1, L Downey2

Objectives
The objective of the pilot study was to determine a patient’s level of psychic pain when they present to an emergency department and whether there was a relationship between this psychic pain and the patient’s level of agitation.

Introduction
Some in the field of emergency psychiatry believe that patients who are agitated are exhibiting psychic pain. The argument is that somatic pain is no different than psychic pain.

However, no one has ever applied the same principle of somatic pain and treatment to psychic pain assessment and treatment. If the level of agitation can be used as a surrogate marker of psychic pain, it could explain many patients presentations. Addressing a patient’s level of psychic pain could be used to reduce their agitation and thereby, reduce their agitation.

This study is part of a broader study examining psychic pain and agitation over a 2 hour period in the emergency department.

Methods
A convenience sample of 200 patients presenting to the ED that fit criteria when a trained research fellow is present.

Urban, inner-city trauma level 1 hospital with 55,000 ED visits a year.

After obtaining consent, the fellow administered 4 validated tools for assessing agitation and a psychological pain assessment and 2 self assessment scales at presentation.

For agitation: Brief Agitation Scale (BAM), Positive and Negative Syndrome Scale-Excited Component (PNSS), Agitation Calmness Evaluation Scale (ACES), Self-Reported Level of Agitation (Likert scale)

For psychic pain; Mee-Bunney Psychological Pain Assessment (MBPPAS), Self-Reported Level of Psychic Pain (Likert scale)

The data was analyzed with SPSS, Version 24. This study had IRB approval.

Results
A total of 151 patients were enrolled at this time. The most ED diagnosis was depression (15%), schizophrenia (10%) or bipolar disorder (12%).

Majority of the patients were African-American (59%), 25-44 years old age range (56%), male (52%).

Self-Reported Agitation

<table>
<thead>
<tr>
<th>Level</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>None</td>
<td>17%</td>
</tr>
<tr>
<td>Mild</td>
<td>10%</td>
</tr>
<tr>
<td>Moderate</td>
<td>17%</td>
</tr>
<tr>
<td>Marked</td>
<td>28%</td>
</tr>
<tr>
<td>Severe</td>
<td>27%</td>
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</table>

ACES and PANSS were not significant with self reported agitation and psychic pain, BAM, MBPPAS. BAM was only significant with self reported agitation ($F = 18, p < .01$) not with MBPPAS.

Discussion
This is the first study of its kind to examine level of psychic pain in the ED.

Psychiatric patient frequently present to the emergency department with a high level of psychic pain and high level of self-reported agitation.

Patients perceive a higher level of agitation to the emergency department than the instruments reveal. Observational tools used to assess patient levels of agitation often significantly misevaluate a patient’s inward level of agitation. This suggests a need for patients’ reported levels of agitation alongside observational tools.

Early identification of moderate and marked levels of agitation could help patients receive treatment sooner for agitation.

Limitations
Small sample size but enrollment is ongoing study.
Self-reported tools not validated.
English speaking only.
All patients were enrolled from one inner city ED site.

Conclusion
Psychiatric patients frequently present to the emergency department with a high level of self-reported psychic pain and agitation. This correlation may signal the need to address a patient’s level of agitation early in the evaluation process.
Level of Agitation of Patients Presenting to an Emergency Department

- Of that total, 53 had no restraints, 47 had restraints.
- The agitation scales decreased over time in both groups.
- Two of the 47 restrained patients on the ABS were rated severely agitated.
Prevalence and Etiology of Agitation


- **Etiology**
  - Psychiatric 20%
  - Medical 11%
  - Alcohol 83%
  - Other drugs 12%
  - Restrained 84%
  - Medicated 72%
    - Olanzapine 39%
    - Droperidol 20%
    - Haloperidol 20%
Prevalence and Etiology of Agitation


Medical history
- Mental health problem 23%
- Alcohol abuse 26%
- Drug abuse 43%
- Seizure disorder 6%

Disposition
- Home 69%
- Inpatient medicine 6%
- Inpatient psych 14%
- Detox or ICU 5%
Reason to Treat Agitated Patients

- Patient distress
- Prevent progression and violence
  - Up to 50% ED staff victims of violence
- Better able to assess the patient
  - 17 of 20 medical directors stated that the patients are so agitated that it is difficult to get vital signs.
  - 14 of 20 said the protocol was to physically restrain patients and medicate them prior to a medical work-up
- Begin therapeutic process
  - Collaborative interactions
  - Elicit information
  - Patients say all they want
  - Include patients in planning
  - Empathize
Treatment

- Verbal de-escalation
- Physical restraints
- Seclusion
- Chemical treatment
- Combination
10 Domains of De-Escalation

- Respect personal space
- Do not be provocative
- Establish verbal contact
- Be concise
- Identify wants and feelings
- Listen closely to what the patient is saying
- Agree or agree to disagree
- Lay down the law and set clear limitations
- Other choices and optimism
Physical Restraints

Alternatives to Restraint Use


- Surveyed a random sample of ED and all Psychiatric EDs in the country.
- Almost all EDs (90%) and Psych EDs use alternatives (98%)
- Alternatives used

<table>
<thead>
<tr>
<th>Alternatives Used</th>
<th>Frequency</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal</td>
<td>84%</td>
<td>36%</td>
</tr>
<tr>
<td>One to one</td>
<td>79%</td>
<td>48%</td>
</tr>
<tr>
<td>Decrease in stimulation</td>
<td>74%</td>
<td>15%</td>
</tr>
<tr>
<td>Food or drink</td>
<td>69%</td>
<td>18%</td>
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</table>
Physical Restraints

Complications of Patient Restraint


- The purpose of the study was to determine the type and rate of complications of patients restrained in the ED over 1 year
- 221 patients were restrained in the ED
- Mean of 4.78 hours - Range .2-24 hrs
- Position - Supine position (87.1%)
- Chemical restraints were added (28.6%)
- Complication rate 5.4%
- No major complications such as death or disability
Seclusion Use in Emergency Medicine


- Defined as involuntary confinement of a patient alone in a room
- Survey study of a random sample of 1067 US EDs medical directors
- 27.8% use seclusion
- Reasons not to use seclusion
  - Problems with physical plant 50.2%
  - Concern over safety 36.5%
  - Too many regulations 19.7%
**Protocol for Treatment of Agitation**

Based on response to interventions, medication is now required

- **Agitation associated with delirium**
  - ETOH or BZN withdrawal not suspected
    - Identify and correct any underlying medical condition
    - Avoid BZN
    - 1. Oral 2nd-generation Antipsychotics
      - risperidone 2 mg
      - olanzapine 5-10 mg
    - 2. Oral 1st-generation Antipsychotics
      - haloperidol (low dose)
    - 3. Parenteral 2nd-generation Antipsychotics
      - olanzapine 10 mg IM
      - ziprasidone 10-20 mg IM
    - 4. Parenteral 1st-generation Antipsychotics
      - haloperidol (low dose) IM or IV (with caution)

- ETOH or BZN withdrawal is suspected
  - Avoid BZN if possible
  - 1. Oral 1st-generation Antipsychotics
    - haloperidol 2-10 mg
  - 2. Oral 1st-generation Antipsychotics
    - haloperidol 2-10 mg with BZN

- **Agitation due to intoxication**
  - CNS Stimulant (e.g., ETOH)
  - 1. Oral Benzodiazepines
    - lorazepam 1-2 mg
    - chlordiazepoxide 50 mg
    - diazepam 5-10 mg
  - 2. Parenteral Benzodiazepines
    - lorazepam 1-2 mg IM or IV

- **CNS Depressant** (e.g., ETOH)
  - 1. Oral 2nd-generation Antipsychotics
    - risperidone 2 mg
    - olanzapine 5-10 mg
  - 2. Oral 1st-generation Antipsychotics
    - haloperidol 2-10 mg
  - 3. Parenteral 2nd-generation Antipsychotics
    - olanzapine 10 mg IM
    - ziprasidone 10-20 mg IM
  - 4. Parenteral 1st-generation Antipsychotics
    - haloperidol 2-10 mg IM with BZN

- Agitation associated with psychosis in patient with known psychiatric disorder
  - No Psychosis Evident
    - Same as agitation due to withdrawal
  - Psychosis Evident
    - Same as for primary psychiatric disorder

- Undifferentiated agitation or complex presentation
Pediatric Agitation

Special populations


- Pregnant
  - Antipsychotics (lack of known teratogenicity)
    - ? Risperadone
  - Pregnancy Class C
Agitation Treatment in Demented Elderly

Black boxed warning increased mortality risk was based on a meta-analysis of placebo-controlled short-term trials of antipsychotics

- Haloperidol has a higher rate of mortality than atypical antipsychotics
- Risperidone is approved in Germany for the treatment of behavioral dementia
- Completely avoiding the use of antipsychotics is not feasible
- Start the medication at a low dosage and to raise the dosage slowly
## QT Prolongation


<table>
<thead>
<tr>
<th>Prolongation of QT (msec)</th>
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<tbody>
<tr>
<td>Ziprasidone  20.3</td>
</tr>
<tr>
<td>Risperidone  11.6</td>
</tr>
<tr>
<td>Thioridazine  35.6</td>
</tr>
</tbody>
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### Findings
- Thioridazine is most marked associated with Torsade
- Haloperidol can cause Torsade and sudden death
- Olanzapine, Risperidone and Quetiapine does not cause Torsade

### Concerns
- Young patients who have family history of prolonged QT
- Older patients with known heart disease or drugs that prolong QT need a pretreatment EKG
- Hypokalemia may predispose to QT prolongation
Need for Benzos in Combination

Reviewed 11 studies of 648 patients

- **Comparison of benzos alone**
  - Sedation equally prevalent
  - Fewer people remained excited after 24 hours with benzos
  - Similar incidence of adverse events

- **Comparison of benzos to antipsychotics**
  - Higher incidence of extrapyramidal symptoms in antipsychotic group

- **Combination treatment thought to have higher incidence of over sedation**
Use of Antihistamines

- Questionable use as solo agent
  - For use with typical anti-psychotics
  - To prevent acute dystonic reactions
    - Studies done on daily use on adverse events
    - More frequent in initiation of treatment
    - More frequent in young males
  - Increases sedation
  - Can cause paradoxical agitation
  - No good evidence for its routine use in ED
Increased violent behavior


- 16 male schizophrenic patients resistant to previous neuroleptic treatment
- Comparison of Haloperidol to Clozapine or Chlorpromazine
- Significantly more violent episodes occurred with haloperidol than other meds or placebo
- Could this be from akathisia or drug-induced behavioral toxicity
Structured literature review

11 articles were used with ED time course

Oral medications are as effective as IM in rapid reduction of psychotic agitation

Consider risperidone 2mg with or without lorazepam 2 mg or olanzapine 10mg

Did not include extreme agitation
Ketamine

Ketamine Use in Agitated Patients
- Given to 40 agitated patients
- Recommend use even in head trauma patients
- 1-5 mg/kg IV or IM with no adverse events

Ketamine Use in Suicidal patients
- 15 suicidal patients received subanesthetic IV dose of ketamine
- 13 of 14 completely free of suicidal ideation at 10 day follow up

Ketamine and Depression
- Intravenous infusion of ketamine or midazolam
- Greater response in ketamine group 8 point decrease
- Response rate higher in ketamine 64% versus 28%
Case #2  36 year old male with schizophrenia was brought in by the family because he stopped taking his medication and is getting violent at home.

- He now becomes more agitated

- What is the treatment of choice?
  - De-Escalation was unsuccessful
  - SAT score of +3
  - Patient given Haloperidol and Lorazepam

- Agitation re-evaluated in one hour
  - Patient had score of 0
Conclusion and Clinical Pearls

Testing
- Test indicated for patients with new onset of psychiatric illness
- Testing rarely indicated for patients with known psychiatric illness
- The use of a protocol is useful for the medical clearance process
- Assess cognitive functioning
- Assess level of agitation
- Determine treatment based on underlying condition and level of agitation
- Use de-escalation, if possible
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THE ONLY CONFERENCE IN THE COUNTRY TO ADDRESS THE BEHAVIORAL EMERGENCIES IN THE ACUTE CARE SETTING INCLUDING EMERGENCY DEPARTMENTS AND PES. REGISTER EARLY NEXT YEAR: THIS EVENT WILL SELL OUT!

DECEMBER 2-4, 2020
RENAISSANCE LAS VEGAS, NEAR THE STRIP ON PARADISE ROAD

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