



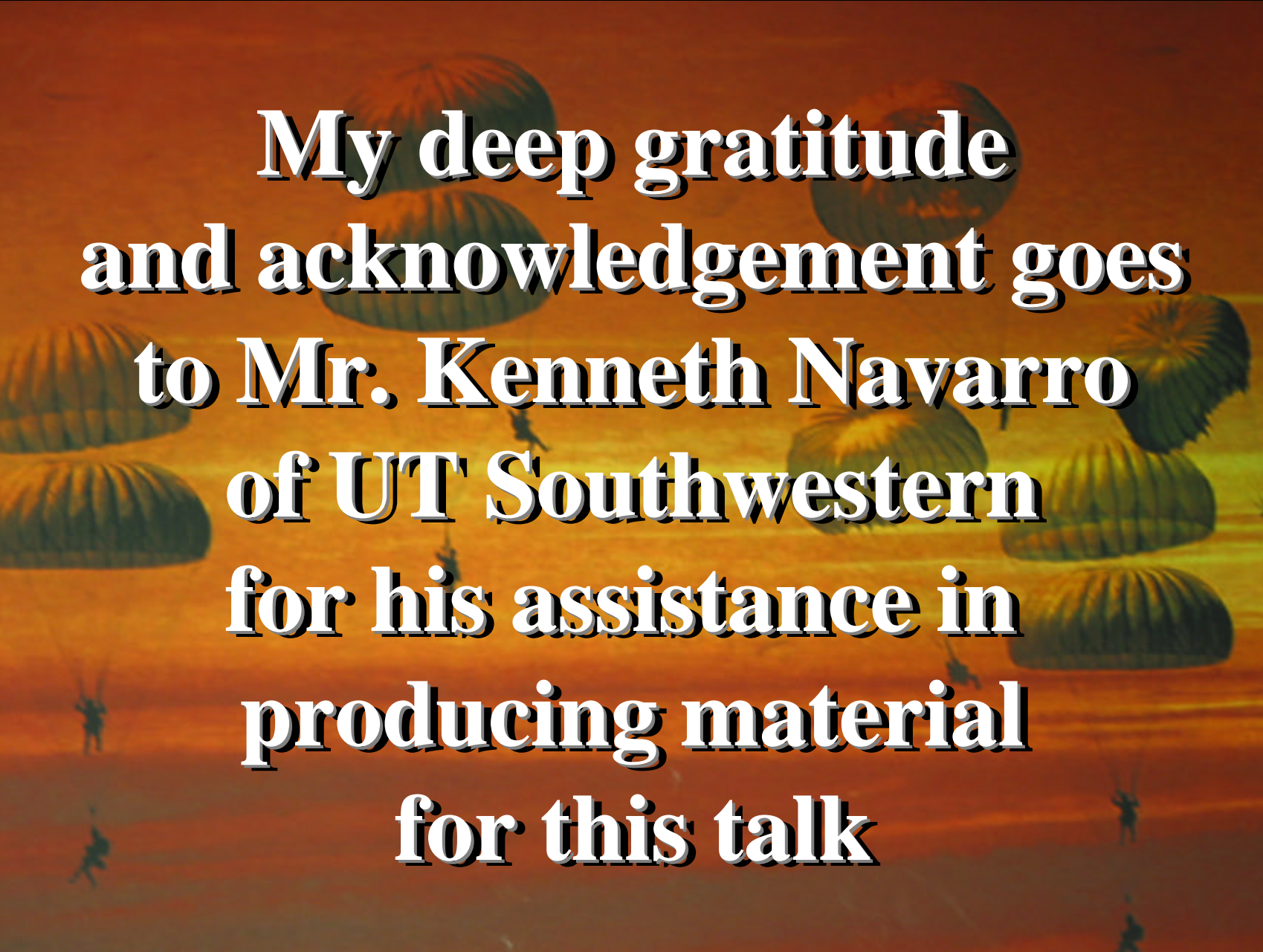
Agitated Delirium

The New EMS Dilemma

Raymond L. Fowler, M.D., FACEP

**Associate Professor of
Emergency Medicine, Surgery, and Allied Health
Chief of EMS Operations
Co-Chair of the Section on
EMS, Disaster Medicine, and Homeland Security
UT Southwestern School of Medicine
Dallas, Texas**

**Medical Director
Mid Georgia Ambulance Service
Douglas County Fire Department**



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and acknowledgement goes
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for this talk**

A sunset scene with several parachutes and skydivers. The sky is a gradient of orange and red, with the sun low on the horizon. Several parachutes are visible, some fully deployed and some partially. Skydivers are seen as small silhouettes against the bright sky. The overall mood is serene and adventurous.

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A photograph of several parachutists in silhouette against a vibrant orange and yellow sunset sky. The parachutes are fully deployed and appear as large, rounded shapes. The scene is captured from a low angle, looking up at the sky. The overall mood is dramatic and adventurous.

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Objectives

At the completion of this CE module,
the Paramedic will be able to:

- Describe agitated delirium and the pathophysiology that can lead to sudden death.
- List factors that should be taken into consideration when using physical restraint.
- Describe the management of the agitated delirium patient.

Case Presentation





Case Presentation

Skin: **warm and dry**

Pupils: **midrange - reactive**

No signs of trauma

En route:

- Less combative
- Decrease in LOC



Case Presentation

Upon arrival at the hospital, the patient has deteriorated into cardiopulmonary arrest



Agitated Delirium



Statistically speaking...

- Summer months
- High heat / humidity
- High body mass index
- Stimulant use

Agitated Delirium

- Sudden bizarre behavior
- Hyperactivity
- Combativeness
- Super-human strength
- Paranoid delusions
- Shouting
- Hallucinations
- Hyperthermia



Signs of Agitated Delirium

- Inability to concentrate
- Extreme restlessness
- Inability to remain still
 - Flailing
 - Diaphoresis
 - Flushed skin
- Tachycardia, sometimes extreme

One Case

A well kempt 20's male
presented to the ER
wildly psychotic,
flailing, diaphoretic, flushed,
with a pulse of 170

*30 mg IV Ativan later
he began to be calmed*

What Causes Sudden Death in Agitated Delirium?



Ventricular Tachycardia
found in 1 of 13 patients
who had experienced
sudden death

*Ventricular fibrillation was
found in none of the patients!*

**What
Does
This
Mean?**

PEA and
Asystolic Arrests
are often due to
shock or hypoxia

**This means
that these people
might have
been saved**

Positional Asphyxia

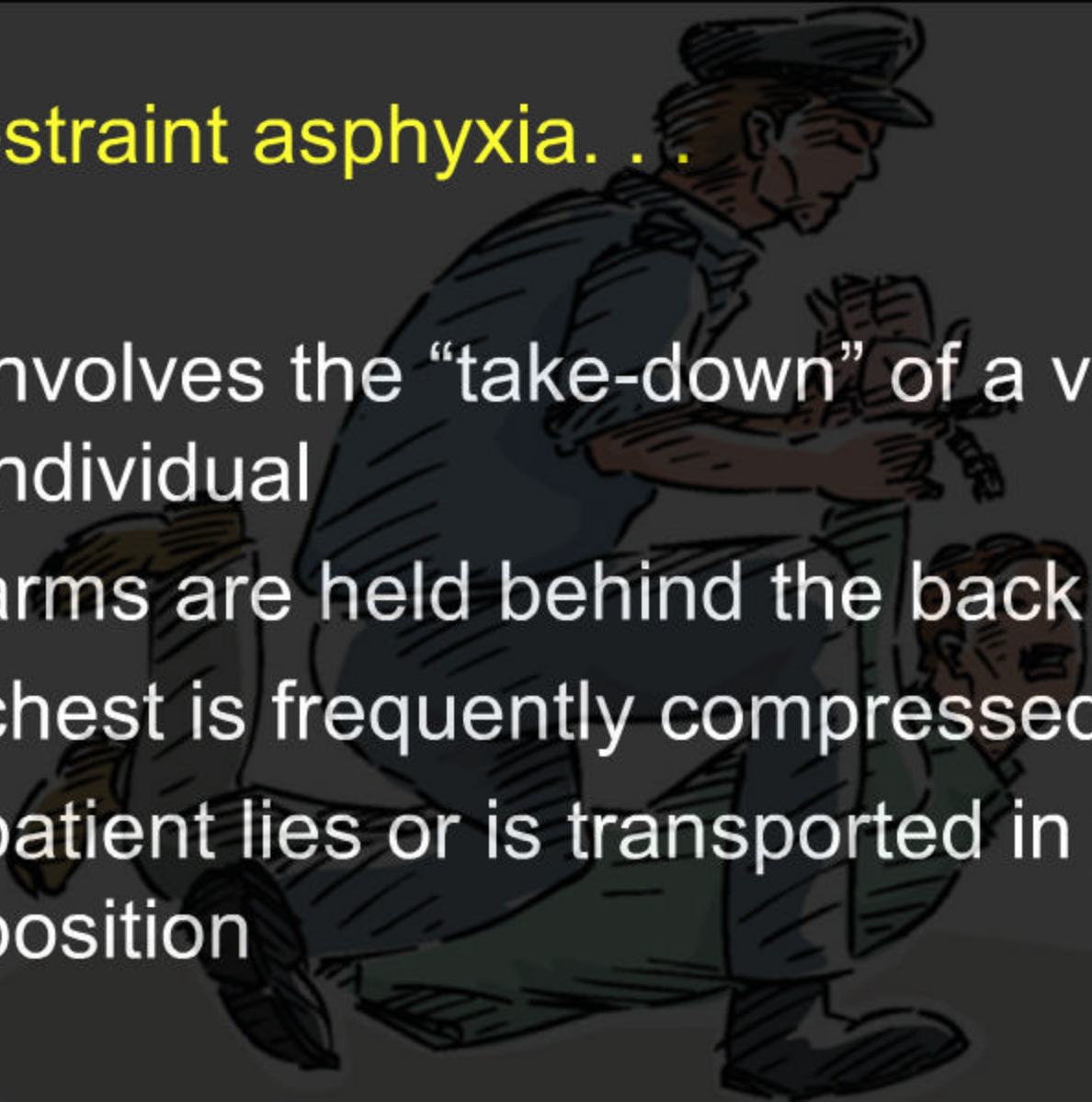
Hobble position makes it difficult for the chest wall to expand and the diaphragm to contract during inhalation



Positional Asphyxia

Restraint asphyxia. . .

- involves the “take-down” of a violent individual
- arms are held behind the back
- chest is frequently compressed
- patient lies or is transported in prone position





Force on the
Chest Wall
prevents
Respiratory
Excursion

**Why
does
this
happen?**

**Because
these
patients
are**

JERKS!

**The violence
of their behavior
can only be
understood by
seeing it happen**

What

do

we

do?

Positional Asphyxia

LA County: 216-Hobble restraint

- majority found prone by EMS
- all struggled with police

10% had witnessed cardiac arrest

- all unanticipated
- all developed a labored breathing
- All underwent an aggressive resuscitation effort
- none survived



10% had witnessed arrests

- *All unanticipated*
- *All with labored breathing*
- *All had aggressive resuscitation*
- ***None survived***

Positional Asphyxia



19 y/o Kid with a knife

- Kid already in police car
- Nice cop, heading out
- Kid in back, arms behind him
- Arms in cuffs**

Positional Asphyxia

Hobble position as cause of death is controversial. . .

- Effects on the respiratory function of healthy volunteers is inconclusive
- Healthy volunteers had decreased pulmonary function values, but no hypoxia or hypercarbia
- Similar results were observed in patients sprayed with oleoresin capsicum spray

Positional Asphyxia



Hobble Restraint

The Problem is...

*These patients can be
SO VIOLENT*

Metabolic Acidosis



Lactate

ery
n
cid

Rhabdomyolysis



Rhabdomyolysis

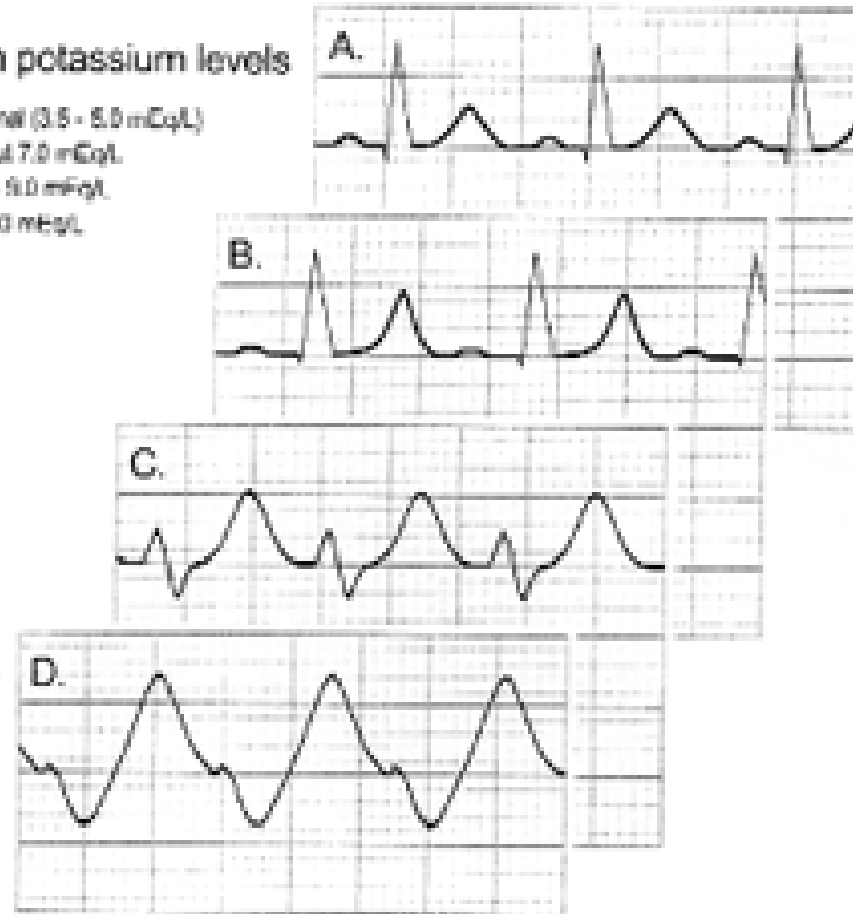
- Muscle cells disintegrate
- Release toxic components and electrolytes
 - These substances damage the kidneys
 - Contribute to dangerous electrolyte imbalances
 - Alter acid-base balance of the bloodstream
- Fluid accumulates in the damaged muscle

Hyperkalemia

- Released from the inside of muscle cells
- Can induce cardiac arrhythmias
- Must be treated if arrhythmias occur

Serum potassium levels

- A. normal (3.5 - 5.0 mEq/L)
- B. about 7.0 mEq/L
- C. 8.0 - 9.0 mEq/L
- D. >10.0 mEq/L



Changes in the ECG in lead II
caused by hyperkalemia

Cardiovascular Stress

If oxygen levels are insufficient, anaerobic metabolism begins with its resultant increase in the production of lactic acid



Management of Agitated Delirium



Management of Agitated Delirium

*This is
Critical!!*

Ap
vio
ext
c



Management of Agitated Delirium

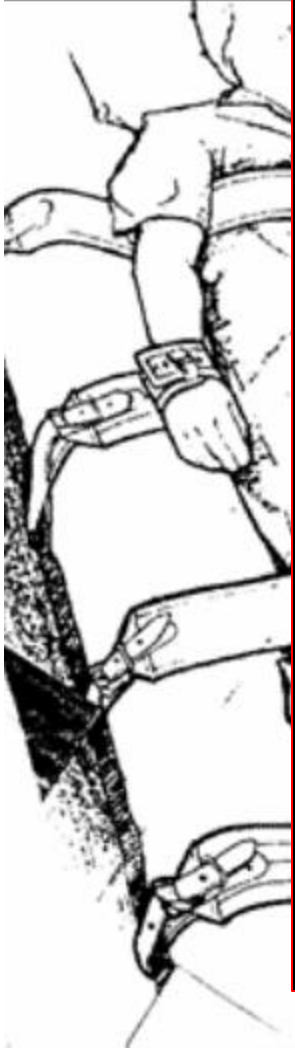


Management of Agitated Delirium





Management of Agitated Delirium



*Appropriate
restraint is
critical...
...and difficult*

rists

kles

t above

Management of Agitated Delirium



Physical restraint, however, can lead to sudden death in otherwise healthy patients, possibly as a result of positional asphyxia, severe acidosis, or a patient's excited delirium.

m

...and, a

patient for

which you're

liable...

• c

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Web

[Spit Net Hood - Spit Hood - SpitNet Hoods - Prisoner transport hood](#)

The two most popular styles of spitnet Hoods, **spit** net hoods and Prisoner transport hoods.

www.securityandsafetysupply.com/department-supplies/transport-2.html - 39k -

[Cached](#) - [Similar pages](#)

[Comade, Inc. Spithoods, Spit Net, Spit Hood, Spit Sock, Spithood ...](#)

Spithoods are a compact, inexpensive device used to protect officers, hospital staff, and firemen from infectious disease.

www.spithood.com/ - 12k - [Cached](#) - [Similar pages](#)

[JS Online: Police admit errors in suffocation](#)

Klobukowski should have known the device was not a **spit hood**, the letter says ... Sheridan began **spitting**, and Klobukowski put the escape **hood** over his head ...

www.jsonline.com/news/ozwash/jan05/293208.asp - 52k - [Cached](#) - [Similar pages](#)

[BadJocks.com Archives - Week of February 19, 2006](#)

something called a "**spit hood**." Later Prochaska apologized to the officers and admitted ... (Albuquerque Tribune) At right, a picture of a **spit hood** in use. ...

badjocks.com/archive/2006/feb1906.htm - 48k - [Cached](#) - [Similar pages](#)

[Sheridan report outlines MPD errors, fixes](#)

The internal investigation found Klobukowski didn't maintain competency in the use of a **spit hood**. And while he "did not willfully mistreat Matthew Sheridan ...

www.gmtoday.com/news/local_stories/2005/January_05/01172005_06.asp - 27k -

[Cached](#) - [Similar pages](#)

[NIK TranZport Hood](#)

Ideal for prisoner transport, the **Spit Net** protects against **spitting** and biting. Note: The TranZport **Hood** should not be used on any person that is ...

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one of our
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The Spit Net 100 Units - 9200-100

The Spit Net affixes under the arms for additional security while transporting threatening subjects. Ideal for prisoner transport, the Spit Net protects against spitting and biting

100 Units



\$670.00



On June 19, Klobukowski had been taking Sheridan to the Mequon police station after Sheridan was arrested for



FOX Point and River Hills responded.

Sheridan began spitting,
and Klobukowski put the
escape hood over his head.

Management of Agitated Delirium



Management of Agitated Delirium



Same sex EMS personnel
should accompany
restrained patients

Management of Agitated Delirium

Always assess for and rule out correctable causes of delirium, such as hypoglycemia or hypoxia



Management of Agitated Delirium



Management of Agitated Delirium

Perform a blood glucose analysis using a glucometer and a small sample of capillary blood



Case:

***D-Stick to a
Fire Extinguisher***

Another Case

An agitated 40's male
was turned over to medics by cops

Extremely paranoid

Medics took him to back of rig where
he finally laid on the stretcher
with a pulse of 170

*When they attempted a D-Stick,
he became wild, ultimately setting
off the fire extinguisher*

Another Case

Everyone in the rig comes boiling out the back door, covered in the extinguisher dust, coughing and retching.

Cops say, “Are you going to call for a backup unit?”

Medic says, “HE’s GOOD TO GO!”

Cops transport the guy in their car.

He dies enroute to the police station

Management of Agitated Delirium

*Fowler's Law of
Agitated Delirium:
"Give 'em Benzo's
until they shut up"*

How Much Sedation is Enough???

A BUNCH!!!

How to give Sedation?

I had recently heard
about a big city protocol
for I.M. Versed
5 – 10 mg lateral thigh

How to give Sedation?

I said to myself,
“I’ll have to give that
a try sometime in the ER
before I put it in the field”

How Much Sedation is Enough???

*25 male on
methamphetamine and in
heroin withdrawal*

Well, actually, he did
yawn a couple of times
between screaming

How Much Sedation is Enough???

Just ALWAYS be
VERY CAREFUL
with Sux with a patient
who may be hyperkalemia...
...think non-depolarizing agent

Management of Agitated Delirium

These people can be
VERY VERY HOT!

≥ 105 degrees!!!



Management of Agitated Delirium

Cooling them off is critical:

- IV fluids
- Limit their activity
- Ice packs in groin and axilla



Management of Agitated Delirium

Hypoglycemia must be watched for and treated to prevent arrhythmia or continued delirium



Management of Agitated Delirium

Hyperkalemia is treated with IV fluids, calcium, bicarbonate, and dextrose (plus insulin if you have it)



Haloperidol and droperidol, the neuroleptics most frequently used for restraint, can cause serious side effects such as extrapyramidal symptoms or QTc (QT interval corrected for heart rate) prolongation.

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How to give Sedation?

P.O. – Nope!

I.M. – Sure!

I.V. – Okay but dangerous

I.O. – Okay but dangerous

P.R. – Ughhhh....stinky

I.N. – ??????????

The Moral Imperative

*Holding a wild, psychotic,
perhaps virus-laden,
struggling patient down to
start an I.V. is
asking for trouble*

The Moral Imperative

*We must herein vow
that we will NOT let
any personnel suffer
a needle stick*





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1: [Mt Sinai J Med](#). 2006 Nov;73(7):976-84.

The evaluation and management of the acutely agitated elderly patient.

[Nassisi D](#), [Korc B](#), [Hahn S](#), [Bruns J Jr](#), [Jagoda A](#).

Unfortunately, the evidence to guide pharmacologic management of acute agitation in the elderly is limited.

agitation in the elderly is limited. Current pharmacologic options include the typical and atypical antipsychotic agents and the benzodiazepines. These therapeutic options are reviewed in detail.

Summary

The Management of Agitated Delirium presents one of the biggest challenges that we face in the history of EMS, and it requires careful coordination and cooperation among all responding agencies

Summary & Links



[Biotel Protocols](#)

www.biotel.ws

[Diazepam](#)

[Altered Level of Consciousness](#)

[Seizure](#)

[Stroke](#)

[Poisoned Patient & Overdose](#)

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