

Excited Delirium

"It's Not Just About Tasers Anymore"


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"Excited Delirium"

- Objectives
 - Be able to define "excited delirium"
 - Recognize the differential of "excited delirium"
 - Discuss treatment options of "excited delirium"


Case of "Excited Delirium"

- October 14th, 2007
- Robert Dziekanski
- Vancouver International Airport



"Excited Delirium"

- 1849- psych patients with continuous agitation and mania with a fever, who then collapsed and died.
- 1980's- Miami
- 2004- Florida, Minnesota, and California



Excited Delirium
 ACEP-Advancing Emergency Care: Excited Delirium an Sudden Unexpected death M. Srinakryer Mayo Clinic

"Definition"

<h3>Excited Delirium</h3> <ul style="list-style-type: none"> Elevated Temperature Agitated Delirium <ul style="list-style-type: none"> Incoherence Bizarre Behavior (violent) Superhuman Strength High Pain Tolerance Respiratory Arrest Death 	<h3>Excited Delirium Syndrome</h3> <p>Sudden death without underlying cause</p> 
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M. Srinakryer, ACEP-Advancing Emergency Care: "Excited Delirium and Sudden Unexpected Death"
 "A knee in the neck of excited delirium"
 "excited Delirium" EMS magazine March 1, 2009

DSM-IV

Acute Confusional State/Delirium

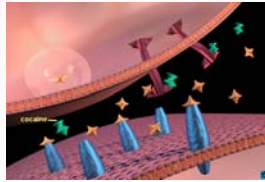
- Clouding of consciousness/thought
- Deficit of short term memory and recall
 - Anxiety and Irritability
 - Perceptual Disturbances
- Autonomic changes (tachycardia, dilated pupils, and sweating)
 - Transient global disorder of attention

Access Medicine/Delirium, dementia, and other cognitive disorders
 Up to date: diagnosis of delirium and confusional states

Pathogenesis

Poorly Understood

- ACH – key role, reason why anticholinergic drugs cause delirium.
- Neuro peptides-Somatostatin
- Endorphins
- Serotonin/Dopamine
- Norepinephrine
- GABA
- Interleukins and HSPs
- ? C-fos protein (biomarker)



Excited delirium.org
Up to Date: Diagnosis of delirium and Confusional States

Differential

- Drugs and Toxins
 - Analgesics
 - Antibiotics
 - Anticholinergics
 - Anticonvulsants
 - Antidepressants
 - Cardiovascular (HTN)meds
 - Steroids
 - Dopamine Agonists
 - GI Agents
 - Herbal Remedies
 - Hypoglycemics
 - Hypnotics
 - Muscle Relaxants
 - Street Drugs
- Metabolic Derangements
- Brain Disorders
- Infections
- Systemic Organ Failure

Up to Date : Diagnosis of Delirium and Confusional states

Prehospital Treatment

“Excited Delirium”

Fulton County Emergency Medical Services
Clinical Care Guidelines – 812
Patient Restraint
8/20/2017

Prehospital Patient Restraint

1. Prehospital providers must identify and document use of the following patient restraint protocol in ongoing patient care records upon the scene.

- Patient unable to follow instructions and high risk for harm and is displaying "hot" signs.
- Patient is a danger to self or others.
- Patient is in public contact.

2. Prehospital providers will document use of the PCR and include the date and location of restraint and, if applicable, type of restraint being used and location of this restraint.

Not in Custody

- Place patient in engine or back of ambulance.
- Apply oral restraints to tongue and cheeks and secure to car walls in public vehicle back.
- Reassess vital signs after application and of restraint during transport.
- Document the use of restraints on PCR (8).

Patient in Custody

- Place patient in engine or back of ambulance.
- Patient to apply restraints to back a harness as to not hinder patient care, but able to monitor vitals and provide protection.
- Police officer must remain in proximity to patient and EMS crew at all times for security and patient safety.
- Reassess vital signs after application and of restraint during transport.
- Document the use of restraints on PCR (8).

Physical Restraint

Vitamin H!!!



Haldol

- **Class of Drug**
Antipsychotic.
- **Mechanism of Action**
Strongly blocks postsynaptic CNS dopamine receptors, inhibiting dopamine mediated effects.
- **Indications**
Psychosis, acute agitation.
- **Contraindications**
Hypersensitivity to drug or components.
Parkinson's disease, CNS depression.
- **Adverse Effects**
Neuroleptic malignant syndrome, tardive dyskinesia, arrhythmias, hypotension, hypertension, seizures, jaundice, hyperpyrexia, dystonia, akathisia, lethargy, anticholinergic effects.
- **Precautions**
Pregnancy Category B.
Caution in elderly, patients with impaired liver function, seizure disorders, cardiovascular disease, thyrotoxicosis.
- **Dosing/Administration**
Available as 5mg/ml for injection.
Adult: 1-10mg IM/IV.
Pediatric: 0.01-0.03mg/kg IM/IV.

SOUTHEAST REGION PATIENT CARE GUIDELINES

Valium (Diazepam)

- Benzodiazepine: possesses **anxiolytic, anticonvulsant, sedative, skeletal muscle relaxant, and amnesic** properties. This makes it a useful drug for treating **anxiety, insomnia, seizures, alcohol withdrawal, and muscle spasms**. It is also used before certain medical procedures to reduce tension and anxiety, and in some surgical procedures to induce **amnesia**.
- **Mechanism of Action**
 - Depresses all levels of the CNS, including the limbic and reticular formation, probably through the increased action of gamma-aminobutyric acid (GABA), which is a major inhibitory neurotransmitter in the brain.
- **Indications**
 - Anxiety.
 - Status epilepticus.
 - Preoperative sedation.
 - **Antiemetic adjunct.**
- **Adverse Effects**
 - **Sedation/drowsiness.**
 - Suppression of REM sleep or dreaming.
 - Impaired motor function
 - Impaired coordination.
 - Impaired balance.
- **Precautions**
 - Use with caution in patients with renal or hepatic impairment, organic brain syndrome, and myasthenia gravis, Parkinson's disease. Extreme care must be used in administering to elderly patients, very ill patients, and to patients with limited pulmonary reserve because of the possibility that hypoventilation and/or hypoxic cardiac arrest may occur.
- **Dosing/Administration**
 - **Adult Dose:**
 - Seizures: IV/IM – 5mg-10mg. May be repeated every
 - 5-10 minutes until termination of seizures. Maximum dose of 40mg.
 - Anxiety/tension: 5 mg to 15 mg IV.
 - **Pediatric Dose:**
 - 0.1mg/kg IV/IM, max. IV/IM dose 0.6mg/kg over 8 hours.

SOUTHEAST REGION PATIENT CARE GUIDELINES


Versed (Midazolam)

- **Class of Drug**
 - Benzodiazepine.
- **Mechanism of Action**
 - Facilitates the action of gamma aminobutyric acid to provide a short acting CNS depressant action.
 - Absorption after IM injection is reliable and usually within 15 minutes. IV sedation is evident after 3-5 minutes.
- **Indications**
 - Need for short acting sedation.
- **Contraindications**
 - Hypersensitivity to drug or components.
 - Hypotension.
- **Adverse Effects**
 - Retrograde amnesia, euphoria, confusion, ataxia, slurred speech, paresthesia, sedation, hypotension, tachycardia, hives, pruritis, blurred vision, nystagmus, miosis, GI distress, injection site irritation, laryngospasm, bronchospasm, respiratory depression, apnea.
- **Precautions**
 - Use with caution in elderly or in patients with severe liver disease, renal failure or CHF.
 - *May potentiate the effects of other CNS depressants.*
- **Dosing/Administration**
 - Available for IV or IM injection as 1mg/ml or 5mg/ml.
 - Adult and pediatric: 0.05-0.1mg/kg IM

SOUTHEAST REGION PATIENT CARE GUIDELINES


TASER

- What is a TASER?
 - Electronic control device
 - Stops coordinated muscle control while current is flowing.
 - Uses compressed nitrogen to shoot two probes at 160 feet per second with the goal of contacting the body or clothing.




Taser.com

Video: Taser Introduction




TASER C2



- Overview The TASER C2 is our newest product designed for personal safety. Utilizing the same technology as our proven law enforcement models, the TASER C2 has incredible take down power.
- The TASER C2 is a self-defense electronic control device. Electronic Control Devices (ECDs) use propelled wires to conduct energy to affect the sensory and motor functions of the nervous system. In addition, the TASER C2 can be used as a direct contact stun device. The TASER C2 uses a replaceable TASER cartridge, containing compressed nitrogen, to deploy two small probes that are attached to the TASER C2 by insulated conductive wires with a maximum length of 15 feet (4.5 meters). The energy can penetrate up to two cumulative inches of clothing or one inch per probe.
- **Advanced Features**
 - Small, sleek ergonomic design
 - Lightweight and easy to carry
 - Lithium Power Magazine provides over 30 applications
 - Available in five designer colors
 - Stop attackers from up to 15 ft. (4.5 m)

Taser.com

Video: TASER Questions



Bozeman WP, Hauda WE. Safety and Injury Profile of Conducted Electrical Weapons Used by Law Enforcement Officers Against Criminal Suspects. *Annals of Emergency Medicine*, April 2009; 53.

- Objective : Electrical weapon safety has been the subject of scrutiny and controversy. This study seeks to accurately reflect the risks of conducted electrical weapons used in actual conditions. The study also seeks to determine the safety and injury profile of conducted electrical weapons used against criminal suspects in a field setting.
- Methods: Prospective, multicenter, observational trial.
- Results: CEWs used against 1,201 in 36 months. 94% men, median age 30 years. Only 3 people with significant injury from CEW.

Lee BK, Vittinghoff E. Relation of Taser (Electrical Stun Gun) Deployment to Increase of In-Custody Sudden Deaths. *The American Journal of Cardiology*, March 2009

- This study sought to determine the effect of taser (CEW) deployment by law enforcement agencies on rates of:
 - (1) in-custody sudden deaths in the absence of lethal force,
 - (2) lethal force (officer firearm-related) deaths
 - (3) serious officer injuries (OI) requiring emergency room visits.

Conclusions

- Rate of in-custody sudden death increased by 6.4 fold, $p=0.006$.
- No significant change in the rate of serious OI's after CEW deployment

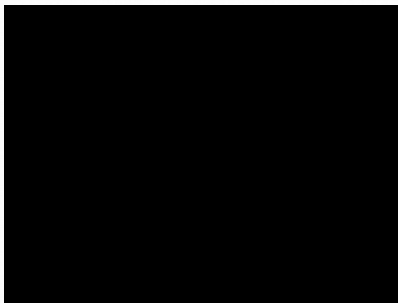
TASER Device Liability and Litigation Risk

June 25, 2007

Douglas E. Klint, Vice President and General Counsel, TASER International

- In conclusion, court rulings and statistics from law enforcement agencies confirm that the deployment of a TASER ECD does not *per se constitute excessive use of force and plays a key role in reducing excessive use-of-force liability claims and litigation against law enforcement.*
- The savings that results from this reduction in excessive use-of-force liability claims and litigation is a very important economic benefit to law enforcement agencies that deploy TASER ECDs

TASER: Bad Hair Day



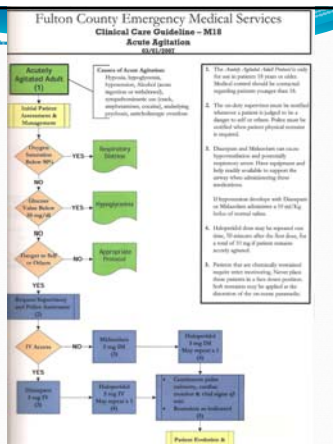
Summary

*Understand the controversy Surrounding "excited delirium" As a diagnosis.

*Understand that delirium has A broad differential.

*Follow "guidelines" per medical Direction.

*Use "On-Line" medical control As necessary.



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- Dr. Matt Bitner

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