

Chemical Sedation:

Necessary but Dangerous

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One slide about me

19 years in EMS

7 year practicing law

50 days on a helicopter



What are we talking about

- We are talking about sedatives for behavioral restraint.
- Procedural sedation is a different lecture.
- We will talk about the rational, the medicine and the law.

Disclaimers

- **THIS IS INFORMATION, NOT LEGAL ADVICE!**
- Any opinion given is my opinion, not the official opinion of any EMS agency, OMD or hospital.
- This lecture does not authorize you to change protocol. Speak to your OMD.

Further Disclaimer

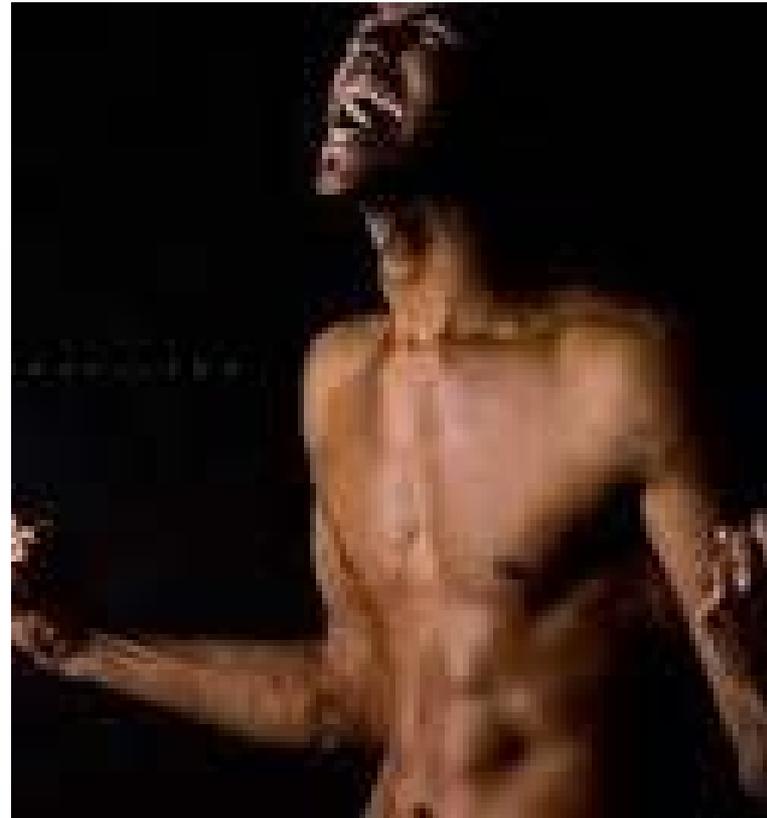
- I have made most of the mistakes discussed in this lecture at least once.

Necessary but Dangerous

- There are cases where a combative patient can put their life in danger.
- There are many others where it is better for the patient (and provider).
- Providers need to realize that there are serious medical and legal risks to performing the procedure.

You are called to the scene...

- An agitated shirtless man is screaming on his front lawn.
- He appears to be bleeding, bystanders inform you he just punched through a car window.



A little more information

- 5 Police officers are required restrain and handcuff the man.
- He continues to thrash and scream that his rights have been violated and he will kill everyone.
- Physical exam reveals a disoriented patient with pulse 144, BP 200/110 his skin is hot to the touch.



History of EMS restraint

In the early days of EMS many providers prided themselves on their skill in “cravat roping.”

This provided many opportunities for provider and patient to get injured.



Rugby pile

Again, we are basically simulating a sport where people regularly injure themselves.



Hogtie

Some research indicates it can be fatal. Some courts have agreed.

Difficult to achieve.



Prone restraint-
sometimes involving a KED
or Reeves.

Doesn't always hold the patient.

Might still kill the patient.

Still difficult to achieve.



4 point restraint

Probably the safest for the patient.

Still difficult to achieve.

Angry patient must still be removed from your cot.



1990s – better standard is in place

Leave



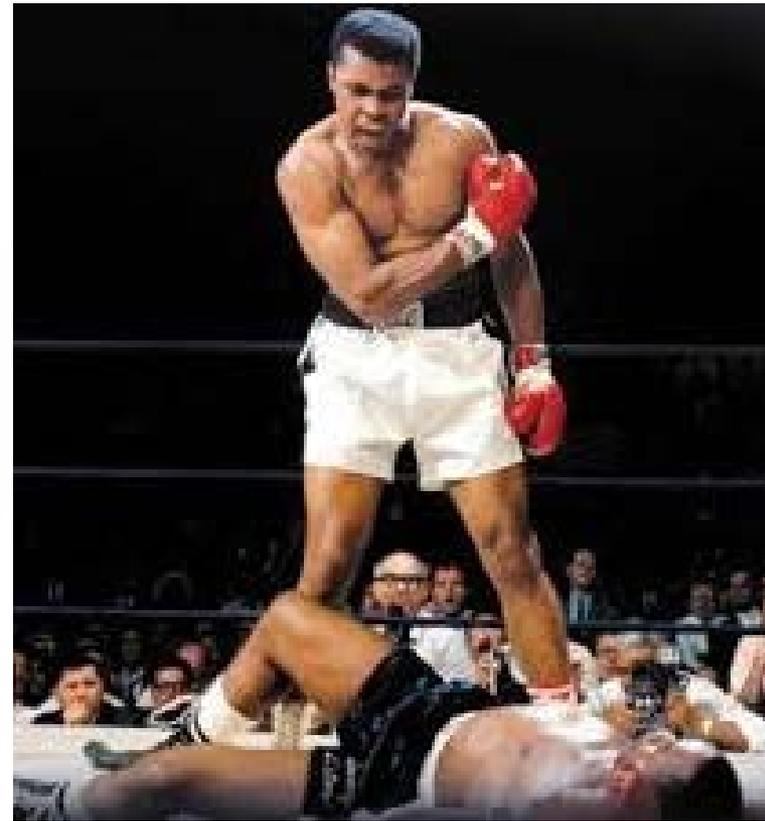
Get police



Bad habits are still taught



A guy's first thoughts on conflict resolution



De-escalate

- Back away
- Talk softly
- Do not contradict the patient. Steer the conversation elsewhere.

Body language

- Body language training can go on for days, but here is a quick pointer.
- Keep your hands out and open.
- Talk slow.
- Do not invade personal space.



Can the situation be controlled verbally?

Maybe

- Non-confrontational approach?
- Different person communicating?

No

- Patient is not at all lucid.
- Patient actively tries to harm anyone who comes near him.

If you can not talk the patient down...

- Let the police handle things.
- Consider carefully whether police should be your primary communicator.
- PROS: Often better trained and more experienced than you.
- CONS: Many people immediately distrust police.



Problems with the police restraint approach

- Can still injure the patient.
- Requires one or more police officers to accompany you to the hospital.
- Sometimes still requires prone or some other form of restraint.
- Continual fighting presents possible problems.

Death and restraint

- Topic is hotly debated. One side believes most deaths are caused by medical conditions, not the restraints.
- Another side believes this is an attempt to white wash excessive use of force.
- Either way, some patients are better off sedated.

EXCITED DELIRIUM SYNDROME

- **This is why having sedation is necessary!**

Excited Delirium Syndrome

- Defined as a specific syndrome by the ACEP in 2009.
- Diagnosed by clinical presentation.
- Exact mechanism unknown.
- Can progress to serious illness and death.
- Previously referred to as agitated delirium, drug induced delirium and other names.

ExDS presentation

- The patient is usually appears manic, unreasonable.
- The patient who is described as “super strong.”
- Usually starts as a police call.



Causes of ExDS

- Possibly multiple origins.
- Usually seen in those with hx. of chronic drug use or mental illness.
- Often preceded by a drug binge. Drug levels may be no higher than a “regular” drug user.
- Mechanism not completely understood but it involves excessive adrenergic stimulation and problems with dopaminic receptors in the brain.

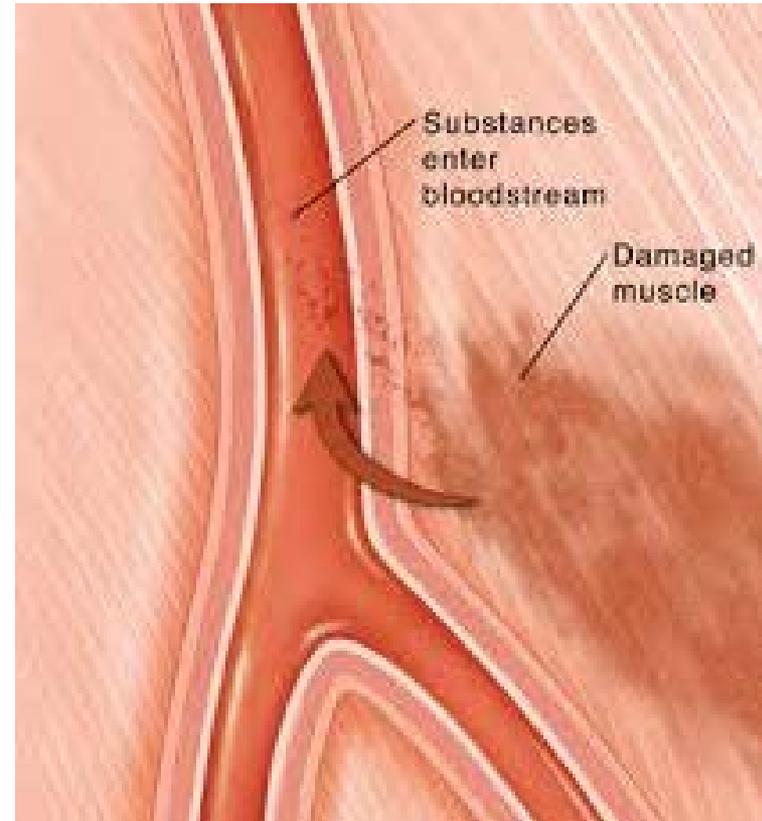
<u>FEATURE</u>	<u>FREQUENCY</u> <u>% (95% CI)</u>
Pain Tolerance	100 (83-100)
Tachypnea	100 (83-100)
Sweating	95 (75-100)
Agitation	95 (75-100)
Tactile Hyperthermia	95 (75-100)
Police Noncompliance	90 (68-99)
Lack of Tiring	90 (68-90)
Unusual Strength	90 (68-90)
Inappropriately Clothed	70 (45-88)
Mirror/Glass Attraction	10

Beware the sudden stop!

- If a patient suddenly stops fighting and is lying completely still have the police handcuff the patient and immediately assess ABCs.
- Some reviews of cases have noted many patients who suddenly become quiet are near death.

ExDS – Serious illness

- Overuse of muscle leads and endocrine disruption leads to hyperthermia.
- The patient may also suffer from metabolic acidosis and hyperkalemia secondary to muscle overuse and breakdown (rhabdomyolysis).



Treatment

- Sedate the patient!
- This stops the hyperthermia and muscle breakdown from getting worse.
- It also stops the fighting.
- Hospital will treat possible hyperthermia, acidosis and hyperkalemia.



ACEP described medications

Class	Agent (Trade Name)	Available Routes	Dosing (mg)*	Onset (min)	Duration (min)
Midazolam (Versed)		IN	5	3-5	30-60
		IM	5	10-15	120-360
		IV	2 - 5	3-5	30-60
Lorazepam (Ativan)		IM	4	15-30	60-120
		IV	2 - 4	2-5	60-120
Diazepam (Valium)		IM	10	15-30	15-60
		IV	5 - 10	2-5	15-60
†Haloperidol (Haldol)		IM	10– 20	15	180-360
		††IV	5 – 10	10	180-360
†Droperidol (Inapsine)		IM	5	20	120-240
		IV	2.5	10	120-240
Ziprasidone (Geodon)		IM	10– 20	10	240
Olanzapine (Zyprexa)		IM	10	15-30	24 hrs
Ketamine (Ketaset, Ketalar)		IM	4-5 mg/kg	3-5	60-90
		IV	2 mg/kg)	1	20-30

Options

Intermediate

- Benzodiazepines
- Antipsychotics
- **Ketamine <.5mg/kg**

Paramedic

- Benzodiazepines
- Antipsychotics
- Ketamine
- Sedatives

What is needed to sedate a patient

- Medication
- Training
- ECG
- Pulse-oximetry
- Nasal end tidal?



Pulse Oximeter



Target your sedation

Score	Descriptor	Characteristics
+4	Combative	Combative, violent, immediate danger to staff
+3	Very agitated	Pulls or removes tube(s) or catheter(s); aggressive
+2	Agitated	Frequent nonpurposeful movement, fights ventilator
+1	Restless	Anxious, apprehensive but movements not aggressive or vigorous
0	Alert and calm	
-1	Drowsy	Not fully alert, but has sustained awakening to voice (eye opening and contact >10 seconds)
-2	Light sedation	Briefly awakens to voice (eye opening and contact <10 seconds)
-3		
-4	Moderate sedation	Movement or eye opening to voice (but no eye contact)
	Deep sedation	No response to voice, but movement or eye opening to physical stimulation
-5	Unarousable	No response to voice or physical stimulation

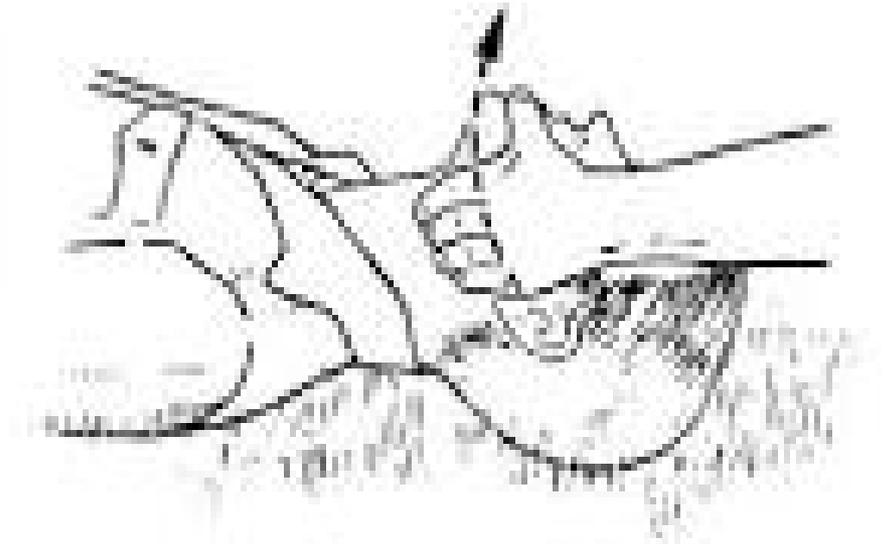
Midazolam

- Benzodiazapine
- Originally just used for RSI induction, it is increasingly carried in ambulances for seizures and sedation.
- Can cause respiratory depression and hypotension
- Onset of action can be 10 minutes when given IM



Midazolam – tx.

- If you give 5mg or more be prepared to manage the patients airway.
- Oxygen and BLS airway maneuvers are usually enough.
- Position the head correctly.
- You may need to do a jaw thrust or insert a nasal for a few minutes.



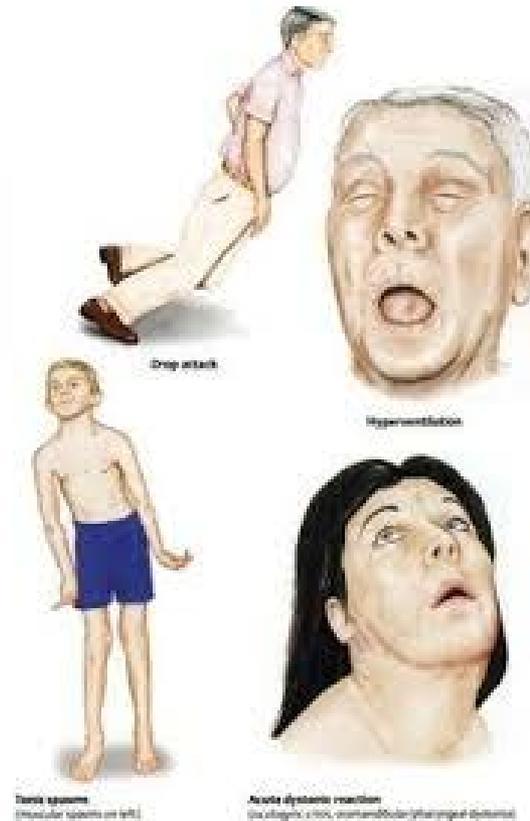
Haloperidol



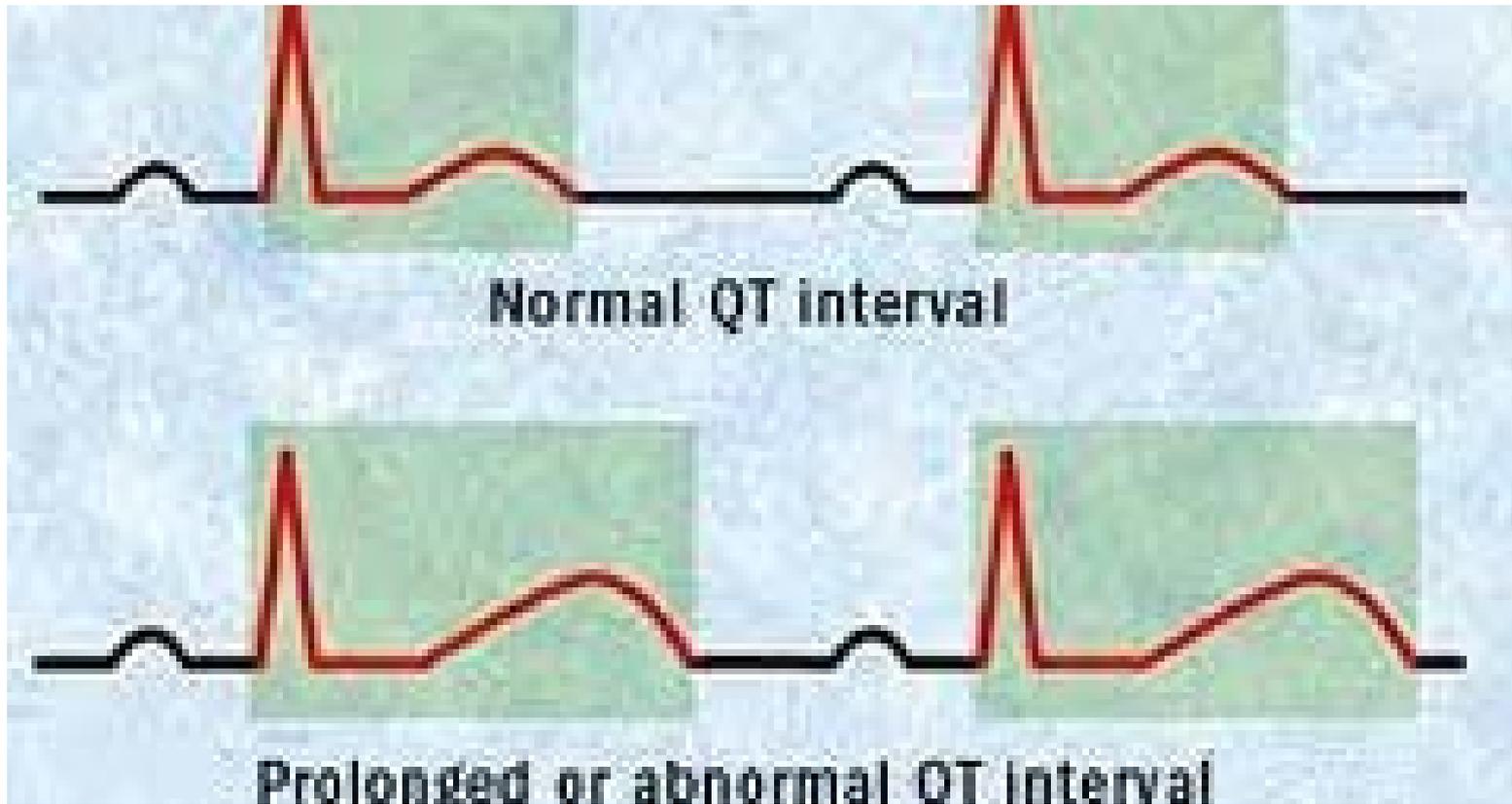
- An older antipsychotic medication.
- Can cause lengthening of QT.
- Can cause dystonic reaction.
- Can take 10 minutes to work.

Haloperidol – tx.

- Look for dystonic reactions.
 - -Speech abnormalities
 - -Aphasia
 - - Strange movements of head or neck.
- Get an ECG tracing for the hospital. Even a single lead print out is helpful.



Always look for this



You are called to...

- An urgent care clinic was treating a patient who came in complaining of auditory hallucinations and violent thoughts. He was treated with 20mg of Haldol IV.
- 10 minutes later the patient stopped breathing. He has been defibrillated 4 times without improvement.
- Based on this information what rhythm and treatment should you anticipate.

Torsades De Pointes

- Should always be suspected after administration or overdose of an antipsychotic.
- Give magnesium per protocol and strongly consider holding amiodarone.



Ziprasidone (Geodon)



- Newer antipsychotic.
- Less side effects than haloperidol.
- Can still cause QT lengthening.
- 10 minutes or longer to work.

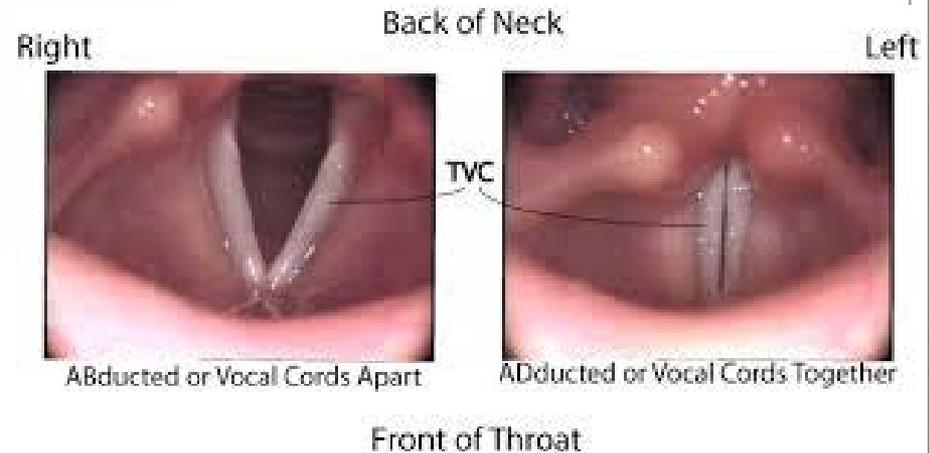
Ketamine



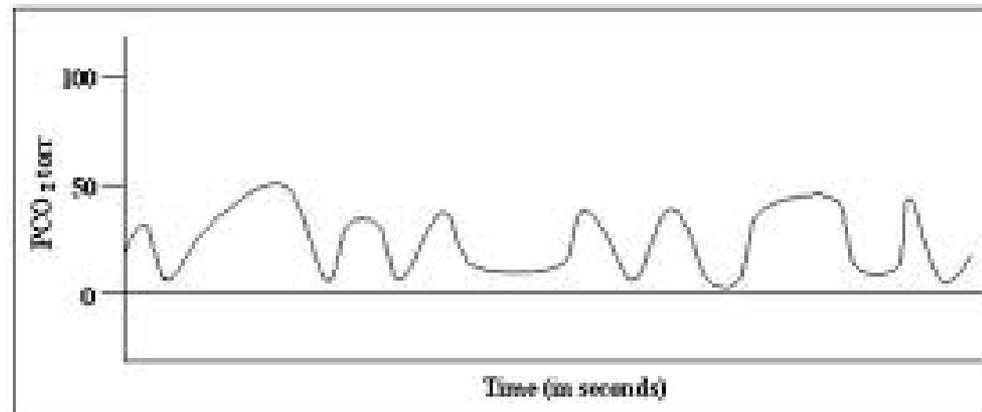
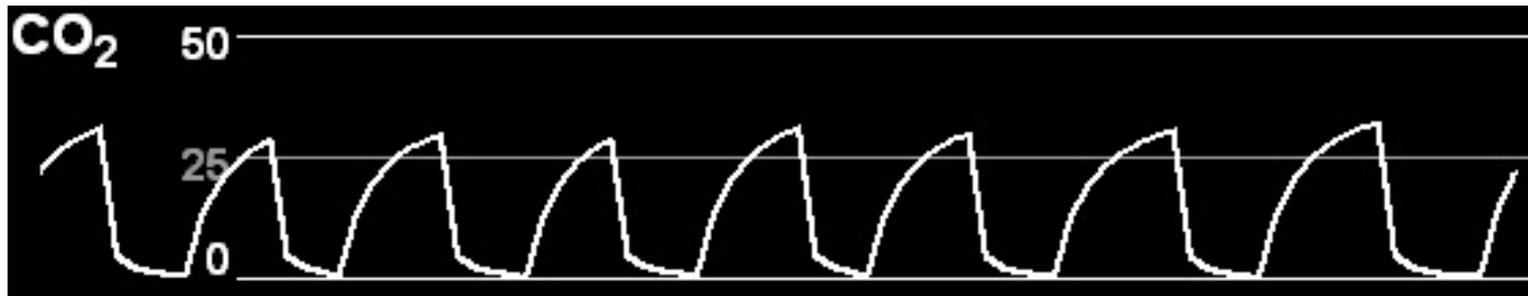
- Onset in a few minutes
- No problems with hemodynamics.
- Can cause laryngospasm and respiratory depression.
- Intermediate dose is too low for behavioral sedation.

Ketamine –tx.

- The dose given by some agencies in the state (4mg/kg IM) matches the ACEP dose.
- That dose is large.
- Occasional respiratory depression or laryngospasm may occur.
- Anecdotal evidence suggests BVM and jaw thrust will correct laryngospasm.



Laryngospasm capnographs



Monitoring

- Patient may have ecg changes – monitor, get 12 lead or intial strip for the hospital.
- Patient may become hypoxic – monitor airway, pulseox and capnography.
- Patient may become hypotensive - BP

What if the patient codes?

- ACLS
- H & T analysis – treat for hypoxia, hyperthermia, acidosis and hyperkalemia
- Bicarbonate and calcium if available.
- Bagged in nebulizers may be helpful if the patient regains a pulse and hyperkalemia is suspected.



Why is the patient fighting?

- Mental illness?
- Intoxication?
- Unintentional overdose?
- AEIOU TIPS



Did your agency provide
any additional training on
behavioral emergencies?

VEMSES requirements

Intermediate

- No psych rotations are required.
- Required to assess 10 patients.
- No specific training in restraint or crisis intervention.
- **Same knowledge level as an EMT.**

Paramedic

- No psych rotations are required
- Required to assess 10 patients.
- **NO** specific training in restraint or crisis intervention.
- Complex knowledge required.

Competency training

- Can a provider document a psychiatric patient using recognizable terminology?
- Can they define and identify schizophrenia?
- Do they understand the side effects of sedative medications?
- Can they document a rationale for using chemical sedation versus withholding?

Back to our friend

- Man is being held by police.
- You helpfully administer 5mg of IM midazolam.
- After a few minutes the patient relaxes and begins to snore.
- You reposition his airway.
- Police prepare to leave, they are not arresting the patient since his actions are related to mental illness.



Is there a problem?

- Your patient is not in police custody.
- You do not have a legal order.
- You have restrained him and sedated him against his will.

But he isn't awake and oriented

- Then get a ECO!
- OR have the police arrest the guy.
- Not knowing the day of the week does not create implied consent.

CAN'T REFUSE IS NOT THE SAME AS IMPLIED CONSENT

- Many patients are in between, they do not fully understand the risk of refusal but can not be assumed to have consented.

Implied Consent

- Most definitions of implied consent or emergency doctrine use words like “life threatening” or “serious risk.”
- An intoxicated man who decides to resist arrest does not have a life threatening medical problem.

ExDS v. other combative guy

- IF the patient exhibits signs of hyperthermia a case can be made for implied consent due to a life threatening emergency.
- Fighting with the police is not a good idea, but does not amount to a life threatening condition by itself.

Implied consent for ExDS

- Thoroughly document your decision.
- What was the patient's mental status?
 - Go beyond awake and oriented.
- What were his symptoms?
 - Document as many as possible from the list earlier.
- Treat the patient seriously
 - Not a "laptop" call.

A better solution

- Have the police arrest the patient. If he is combative and fighting he can probably be arrested for something.
- Convince reluctant LEOs that arrest is probably the safest legal option for all involved.

ECO



- This lecture will not discuss in detail the entire process.
- Basics:
 - Must be issued by the magistrate.
 - Allows a person to be detained against their will for further evaluation.
 - A patient under an ECO order is similar to a patient under arrest. The police can then consent to treatment or transport.

GET SIGNATURES!

- In any situation where consent is difficult to obtain, or disputed by a party, get signatures.
- LEO can sign if the patient is in custody.
- Document the names and circumstances in your narrative



*Sowers v. City of New
York*

Another patient

- You are called for a seizure at a man's residence
- On arrival the patient is agitated and disoriented. He swings at people who come near him.
- You restrain him and administer 5mg Versed IM.
- You then find out the neighbor told the dispatcher seizure without witnessing one because "they read about it"
- Unsure of what to do, you transport the patient to the hospital.

Takeaways

- Assess then sedate.
- There are always chances to mitigate.

WRAP UP

- Remember:
 - SEDATION MAY BE LIFESAVING.
 - SEDATION IS OFTEN SUPERIOR TO PROLONGED BRAWLS.
 - SEDATION CALLS ARE HIGH LEVEL EVENTS.

THANK YOU FOR COMING

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