

# Control of the Acutely Agitated Patient

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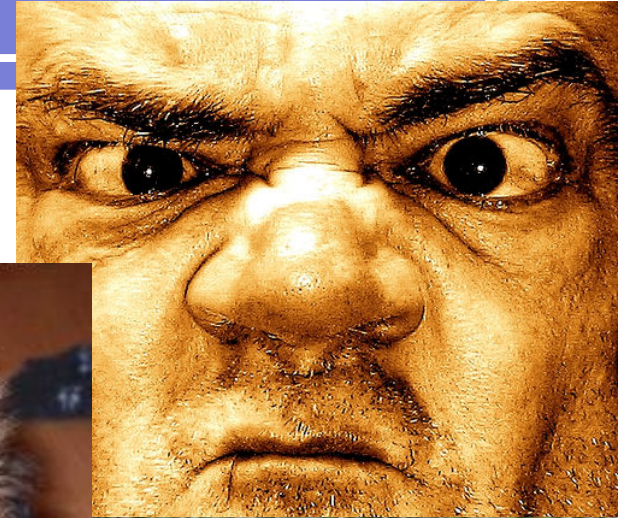




Level I Agitation Center!



# Why agitated?



# The Acutely Agitated Patient

- Management challenge
  - Prehospital
  - ED
- Reasons
  - Medical condition
  - Psychiatric illness
  - Alcohol intoxication
  - Drug ingestion
  - Mean person
- Techniques
  - Verbal
    - “Verbal judo”
  - Physical restraint
  - Chemical restraint





# ACEP Task Force – Excited Delirium

- September, 2009
  - “May be amenable to early therapeutic intervention in some cases in the pre-mortem state”
  - “Physical restraints should be rapidly supplemented with chemical restraints...”



# Chemical Restraint

- Options
  - Benzodiazepines
    - Respiratory depression
    - Hypotension
  - Anti-psychotics
    - Typical
      - Neuroleptics
    - Atypicals
      - Ziprasidone (Geodon)
      - Olanzapine (Zyprexa)
  - Dissociatives
    - Ketamine
  - Antihistamines



# EAGLES Survey

- 34 cities
  - 33 have something for agitation
  - 26 use midazolam
  - 9 use diazepam
  - 4 use lorazepam
  - 5 use haloperidol
    - 3 are adding
  - 2 use droperidol
  - 1 uses Ketamine
  - Hammer/Tazer/  
Bourbon/Succinylcholine





# Droperidol

- Butyrophenone
- Inapsine
- Initially approved in 1970
- Potent antagonist of dopamine subtype 2 receptors in the limbic system
- Sedative
  - Chemical restraint
- Anti-emetic



# Droperidol

- Very effective
  - Successful sedation
  - Few treatment failures
  - No respiratory insufficiency
    - Hick et al, Prehosp Emerg Care 2001





# Droperidol

- **Safe**

- Chase PB, Biros MH, Acad Emerg Med 2002
- Richards JR et al, J Emerg Med 1998
- Szuba et al, J Clin Psychiatr 1992
- Watcha M, Anesthesiol Clin North Am, 2002
- Silverstein JH et al, Anesthesiology, 2002
- Cohen J et al, Gastrointest Endosc, 2000
- Magee LA et al, Am J Obstet Gynecol 2002



# Droperidol versus Haloperidol

- Thomas, et al
- Ann Emerg Med, 1992
- Randomized, double-blind, prospective
  - 68 patients
- Conclusions:
  - In equal doses, droperidol results in **more rapid** control of agitated patients than haloperidol, without any increase in undesirable effects





# FDA Warning

- “Black box” warning
  - December, 2001
- Cases of QT prolongation and/or torsades de pointes have been reported in patients receiving droperidol (Inapsine)



# Haloperidol

- Haldol
- FDA warning
  - September, 2007
- Torsades de Pointes and QT prolongation have been observed in patients receiving haloperidol





# Droperidol versus Midazolam

- Martel, et al
  - Acad Emerg Med, 2005
- Prospective, randomized, double-blind trial
  - 144 patients
- Conclusions:
  - Acutely agitated ED patients sedated with droperidol had **fewer cases of oversedation**



# Droperidol versus Midazolam

- Knott et al
- Ann Emerg Med, 2006
- Double blind, randomized clinical trial
  - 153 patients
- Conclusions
  - No difference in onset of adequate sedation of agitated patients, but those sedated with midazolam may have an increased need for active airway management





# Discontinuation of Droperidol

- Martel et al
- Prehospital Emerg Care, 2005
- Retrospective review
  - 71 patients
- Conclusions
  - Since the removal of droperidol as a treatment option for out-of-hospital agitated patients, there was an observed increased frequency of continuous pulse oximetry monitoring, intubation, ED critical care management, and intensive care unit admission in patients requiring chemical sedation for control of agitation

# Why the Black Box?

- Should the black box be light gray?
  - Dershwitz M, J Clin Anesth, 2002
- Smoking gun or just smoke and mirrors?
  - Mullins M et al, J Toxicol Clin Toxicol, 2002
- There is no evidence.
  - Horowitz BZ et al, Acad Emerg Med, 2002
- Where is the evidence?
  - Kao LW et al, Ann Emerg Med, 2003

# What is the Evidence?

- “The evidence is not convincing for a causal relationship between therapeutic droperidol administration and life-threatening cardiac events”
- “The recent black box warning appears to have originated from post-marketing surveillance data rather than data reported in the peer-reviewed medical literature”
  - 94 cases from worldwide data base
    - 53 occurred on July 9, 2001



# Droperidol

- Thirty years of use
  - 25 million units sold in 2000
  - Longest latency from initial FDA approval to black box warning
- No clinical trial or systematic review has reported any adverse cardiac events



# Denver Experience

- January 2009
- 387 uses
  - 50% alcohol related
  - 25% psychiatric
  - 25% undifferentiated
- QTc intervals
  - >450 msec
    - 70% women
    - 50% men



# Denver Experience

- Safe
  - No torsade
  - 1 complication
- Effective
  - Better sedation
    - 2 points higher





# Conclusions

- Benzodiazepines are great
  - Maybe not for everyone
- Atypical anti-psychotics may be the future
- Ketamine
- We really like droperidol



# Thank you!

