Acute Alcohol Intoxication (AAI)

Roberta Agabio, M.D.
Department of Biomedical Sciences
Section of Neuroscience
University of Cagliari, Italy

© AMSP 2012
Alcohol Use & Problems

- 90% Ever drink

- 14% Drinkers have 1+ problem:
  - Accidents
  - Violence
  - Mood swings
  - Physical illness
AAI: Lecture Focus

1) Alcohol’s drug class
2) Alcohol's brain effects
3) AAI signs and symptoms
4) Evaluation and treatment of AAI
5) Unhealthy alcohol consumption
Drug Classes Based on Effects

- Depressants
- Stimulants
- Opioids
- Cannabinoids
- Hallucinogens
- Inhalants
- Others
Depressants Include

**Class**
- Benzodiazepines
- Bz-like meds
- Barbiturates
- Others

**Example**
- Diazepam
- Zolpidem
- Secobarbital
- Chloral hydrate

**Alcohol**

© AMSP 2012
Effects & Dangers

**Effects**

↓ Anxiety
↑ Sleep
Muscle relaxation

Anesthesia ↓ Seizures

**Dangers**

Sedation
↓ Memory
↓ Coordination

Drug interact
Dependence

Intoxication

© AMSP 2012
Intoxication

Medical problems
↓ Vital signs, coma, risk of death

Temporary psychiatric syndromes
Cognitive disorders
Psychosis
Depression
Anxiety

© AMSP 2012
AAI: Lecture Focus

1) Alcohol’s drug class
2) Alcohol’s brain effects
3) AAI signs and symptoms
4) Evaluation and treatment of AAI
5) Unhealthy alcohol consumption
Reward Brain System

Alcohol ↑ dopamine transmission → Pleasurable effects
Alcohol's Brain Effects

1. Homeostasis

Inhibition \(\rightarrow\) Excitation

2. Acute use

ALCOHOL

Inhibition \(\downarrow\) Excitation

3. Chronic use (tolerance)

ALCOHOL \(\downarrow\) OPPOSITE CHANGES

Inhibition \(\downarrow\) Excitation

4. Withdrawal

OPPOSITE CHANGES

Inhibition \(\downarrow\) Excitation

© AMSP 2012
Blood Alcohol Concentration (BAC)

- Standard drink = ~12 g alcohol
- 1 drink → BAC = ~15 mg% (0.015 g/dl)
- ↑ BAC with:
  - Female
  - ↓ Weight
  - Drink without food
BAC’s Effects

**BAC (mg%)**  |  **Effects**
--- | ---
> 300 | ↓ Vital signs, coma, death
≤ 300 | → Difficulty to awaken
≤ 200 | → Anger, moody, confusion
≤ 100 | → Sleepiness, ↓ coordination
≤ 50 (1-3 drinks) | → Well-being, ↓ inhib
AAI: Lecture Focus

1) Alcohol’s drug class
2) Alcohol's brain effects
3) AAI signs and symptoms
4) Evaluation and treatment of AAI
5) Unhealthy alcohol consumption
Definition of AAI (DSM-IV)

Recent ingestion
Behavior changes (e.g. aggression)

1+ Slurred speech
  ↓ Coordination
  Unsteady gait
Nystagmus
  ↓ Attention or memory
  Stupor or coma
AAI Medical Problems

Vital signs
- Body temperature
- Respiratory rate
- Blood pressure

Risk of death
- BAC > 300 mg%
- Opioids or other depressants
AAI Temporary Psychiatric Symptoms

Cognitive problems
Psychosis
Depression and/or anxiety
AAI Cognitive Problems

Confusion
↓  Memory
↓  Alertness
↓  Judgment

Disorientation
AAI Psychosis

Suspiciousness
Hallucinations
Paranoid thoughts
All without insight
AAI Depression
Sad all day
Every day for 2+ weeks
Can be suicidal

AAI Anxiety Syndromes
Meet criteria for anxiety disorders
(e.g., panic disorder)
AAl: Lecture Focus

1) Alcohol’s drug class
2) Alcohol's brain effects
3) AAl signs and symptoms
4) Evaluation and treatment of AAl
5) Unhealthy alcohol consumption

© AMSP 2012
AAI Evaluation

- Other med/psych illness
- Other intox/withdrawal
- Smell of alcohol
- AAI signs & symptoms
- Laboratory tests
- Toxicological screen
Toxicological Screen

Check BAC & use of other drugs

• BAC > 300 mg% → potential death
• BAC ↓ by ~15mg%/h
• Opioids or other depressants ↑ risk

How to do

• Draw ~ 50 cc blood sample
• Collect ~ 50 ml urine sample
Rule Out Other Problems

Bleeding
Shock
Electrolyte disturbances
Cardiac disorders
Infections
Consequences of brain trauma
Test for blood sugar

Use a fingerstick

If ↓ administer

• 50 cc of 50% glucose IV
  &
• 100 mg vit. B1 (IV or IM) if needed
Medical Treatment

If ↓ vital signs = EMERGENCY PROBLEM
Support Vital Signs

Measure vital signs frequently

Address life-threatening problems =

ABCs Of Emergency Care

• Airway
• Breathing
• Circulation

NO MEDS until are sure they are needed
Airway & Breathing

Assure adequate ventilation

- Straighten head (if no neck injury)
- Remove obstructions in mouth
- If needed intubate
- Use respirator (~12 breaths/min)
Circulation

Maintain adequate blood pressure

• Start IV line
• Use large-gauge needle
• Use a slow drip until know if need fluids
Other Drugs: ↓ Absorption

Inducing vomiting (oral ipecac syrup)
Patient awake & stable pulse

Gastric lavage
Patient not awake
Took drugs within 12 h
Not corrosive, kerosene, strychnine, oils
If comatose, only after intubation
Gastric Lavage: How to do

- Nasogastric tube
- Patient on his/her left side
- Head slightly over the edge of the table
- Evacuate stomach
- Isotonic saline lavage until fluid clear
- Repeat up to 10-12 times
- Sample of washings for drug analysis
Specific Drugs: Antidotes

Opioids → naloxone
Monitor possible opioid abstinence syndrome

BDZ → flumazenil
Monitor possible seizures & ↑ intracranial pressure

Atropine-like drugs → physostigmine

Barbiturates → No antidote
Forced diuresis & alkalinization of urine
AAI Psychiatric Symptoms
Medical Treatment

Protect & reassure
Should improve < 1 month
Consider inpatient
Observe & provide general support
Meds should be avoided
BDZ or antipsyc meds for sedation
No antidepressants

© AMSP 2012
AAI: Lecture Focus

1) Alcohol’s drug class
2) Alcohol's brain effects
3) AAI signs and symptoms
4) Evaluation and treatment of AAI
5) Unhealthy alcohol consumption
Unhealthy Drinking

1) Alcohol Abuse and Dependence

2) At-risk Drinking

Consider this in all patients
### Abuse

1+
- Role failure
- Risk of harm
- Run-ins with law
- Relationship trouble

In same 12 months

### Dependence

3+
- Tolerance
- Withdrawal
- Unable to limit
- Unable to cut down
- ↑ Time with alcohol
- ↓ Time elsewhere
- Use in spite of problems

© AMSP 2012
At-Risk Drinking

> 14 drinks per week
≥ 5 drinks per occasion

> 7 drinks per week
≥ 4 drinks per occasion
ID Unhealthy Drinking

1) Ask
   • *How many drinks per occasion?*
   • *How many drinks per week?*

2) Blood markers*
   - MCV > 90 µ3
   - GGT > 35 U/l
   - CDT > 2.0 U/l
   - ALT > 35 U/l
   - AST > 33 U/l
Questionnaires

- **CAGE**
  - **Cut down**
  - **Annoyed**
  - **Guilty**
  - **Eye-opener**

- **AUDIT**
  (Alcohol Use Disorders Identification Test)
  - 10 items about Alcohol consumption
  - Drinking behavior
  - Alcohol-related problems
Rx Abuse/Dependence

1\textsuperscript{st} step: Intervention
2\textsuperscript{nd} step: Detoxification
3\textsuperscript{rd} step: Rehabilitation

Rx At-Risk Drinkers
Help patients ↓ drinking
Brief Intervention
1st Step: Intervention

Help patients to

• Recognize problems
• ↑ Motivation to change
• ↓ Future difficulties

Motivational interview

Brief intervention
Motivational Interview

- Feedback
- Responsibility
- Advice
- Menu
- Empathy
- Self-efficacy

Brief Intervention

- Education
- Dangers
- Suggest ↓ alcohol use
- Avoid risky situations

© AMSP 2012
2nd Step: Detoxification

~ ½ Patients need it

Reassurance temporary nature

Meds

• Oral multivitamins
• Benzodiazepines for ~1 week
3rd Step: Rehabilitation

Help patients to

• Keep motivation high
• A lifestyle free of alcohol
• ↓ Risk of relapse

Counseling
Self-help groups (AA)
Meds
Rehabilitation Meds

1. Disulfiram
2. Oral naltrexone
3. Slow release naltrexone
4. Acamprosate
1) Alcohol’s drug class
2) Alcohol's brain effects
3) AAI signs and symptoms
4) Evaluation and treatment of AAI
5) Unhealthy alcohol consumption
Conclusions on AAI

1) May be a life-threatening

2) Other depressants ↑ risk of death

3) May → temporary psych symptoms

4) Rx: support vital signs until
   • Alcohol has been metabolized
   • Psych symptoms disappear

5) Evaluate unhealthy alcohol use

© AMSP 2012