

# **Treatment of Uncomplicated Alcohol Withdrawal**

# Introduction

- **Alcohol withdrawal (AW)**
  - Occurs in 70% of Alcohol dependent patients
  - Increased rates in the elderly
  - No gender/ethnic differences
  - 85% of AW are mild-to-moderate
  - 15% of AW are severe and complicated:
    - Seizures
    - Delirium Tremens: associated with 5% mortality

# Diagnostic Criteria for AW

1. Cessation of (or reduction in) alcohol use that has been heavy and prolonged.
2. Two (or more) of the following, developing within several hours to a few days after Criterion 1.

- Autonomic hyperactivity (e.g., diaphoresis or HR>100)
- Increased hand tremor
- Insomnia
- Nausea and vomiting

- Transient visual, tactile, or auditory hallucinations or illusions
- Psychomotor agitation
- Anxiety
- Grand mal seizures

# Diagnostic Criteria for AW

3. The symptoms in Criterion B cause clinically significant distress or impairment in functioning.
4. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

*Diagnostic and Statistical Manual, 4<sup>th</sup> ed.*

# Alcohol Withdrawal syndrome

- Onset: usually within 24 hours after last drink
- Peak: 24 – 36 hours
- Duration: usually lasts till 48 hours, maximum by 4 – 7 days
- Severity of symptoms/signs of AW depends on
  - the amount of alcohol consumed recently
  - The duration of patient's recent alcohol intake

# Alcohol Withdrawal syndrome contd...

## Signs/Symptoms

- Autonomic hyperactivity

- Tremors
- Sweating
- Nausea
- Vomiting
- Headache

- Neuropsychiatric symptoms

- Agitation,
- Anxiety
- Auditory disturbance
- Clouding of consciousness
- Disturbance in visual / tactile sensations

# Diagnosis

- History
- Physical examination
- Structured examination using Scales
- Laboratory investigation

# Diagnosis – History

- Alcohol related
  - Quantity of alcohol intake
  - Duration of alcohol use
  - Time since last drink
  - Previous alcohol withdrawals
- Onset and symptoms of withdrawal syndrome
  - Insomnia, restlessness, anxiety, tremulousness

# Diagnosis – History

- Recent onset of fever, or other physical illness
- Rule out other causes
  - H/O head trauma, infections, hypoglycaemia
- H/O other medical illnesses
  - Arrhythmias, congestive heart failure, coronary artery disease, GI bleeding, liver disease, pancreatitis, CNS disorder, etc.

# Diagnosis – physical examination

- **Focus on**

- *Evidence of alcohol withdrawal*

- Tremors of outstretched hands
    - Increased pulse rate, blood pressure

- *Evidence of alcohol induced damage*

- Abdominal examination: Liver enlargement,
    - CNS examination

# Diagnosis – Withdrawal scales

- **Clinical Institute Withdrawal Assessment of Alcohol Scale – Revised (CIWA-AR)**
  - Quick, easy to use and useful in a variety of hospital settings
  - Set of 10 item questionnaire – based on asking the patient as well as observing the patient
  - Scoring
    - Score 8-10 (mild)
    - Score 10-15 (moderate)
    - Score > 15 (severe) impending delirium tremens

# Diagnosis – Withdrawal scales

- **Clinical Institute Withdrawal Assessment of Alcohol Scale – Revised (CIWA-AR) contd...**
  - **Items:** nausea and vomiting; tremor; paroxysmal sweating; anxiety; agitation; tactile disturbance; auditory disturbance; visual disturbance; headache; orientation and clouding of sensorium
  - Can be used even by nursing staff to diagnose and monitor patients
  - Available for free download

# Diagnosis – Laboratory Tests

- Identify acute and/or heavy drinking ( $\geq 5$  drinks/day):
  - Blood Alcohol Levels (BAL)
  - Gamma-glutamyl transferase (GGTP  $> 35$  IU/L)
  - Carbohydrate Deficient Transferrin (CDT  $> 20$  IU/L)
  - Erythrocyte mean corpuscular volume (MCV  $> 91.5 \mu^3$ )
  - CDT + GGTP best diagnostic combination

# Management of AW

- Supportive care
- Treatment setting
- Pharmacological management
- Non-pharmacological management

# Management of AW: Treatment goals

- Two primary goals
  - To help patient come out of withdrawals in a safe and comfortable way
  - To enhance the patient's motivation to enter long term treatment, and thereby abstain from alcohol

# Management of AW: Setting

- Most (80%) of AW can be managed on outpatient basis
- Broad indications for outpatient treatment
  - Mild to moderate dependence
  - No history of AW seizures/delirium
  - No serious medical/surgical problems
  - No serious psychiatric/drug history
  - Social support
  - Supervision/housing available

# Management of AW: Setting

- Inpatient treatment required for 10 -20% of patients:
  - Severe withdrawal states - DT, Overdose, multiple drug use
  - ↑ Severity (seizures / delirium)
  - Major medical/surgical problems
  - Major psychiatric problems
  - Poor support, homelessness
  - Pregnancy
  - Geographical distance
  - Failure of outpatient treatment

# Management of AW: supportive care

- **Supportive care**

- Monitor vital signs and provide general nursing care
- Evaluate hydration: maintain intake-output chart and relevant investigations
  - Sufficient to give oral fluids
- Ensure serum electrolytes are maintained
- Evaluate for concomitant medical and surgical problems
- General physical examination and observe for development of possible focal neurological signs
- Institute high calorie and high carbohydrate diet

# Management of AW: pharmacotherapy

- **Benzodiazepines**
- **Vitamin supplement**
- **Other medications**

# Management of AW: pharmacotherapy

- **Benzodiazepines**

- ‘Medications of choice’ for treatment of alcohol withdrawal
- Mechanism of action: ‘Cross-tolerance’ with alcohol
  - Pharmacological actions similar to alcohol → symptoms of AW relieved with higher doses of Benzodiazepines
- Longer acting benzodiazepines are most suitable agents

# Management of AW: pharmacotherapy

- Benzodiazepines control symptoms of AW:
  - seizure activity, delirium, anxiety, tachycardia, hypertension, diaphoresis, and tremor
- No benzodiazepines found superior to another
  - Choice guided by the medication's duration of action, cost and potential for abuse
  - Usual medicines prescribed: Diazepam (e.g. Valium) and chlordiazepoxide (e.g. Librium)
- In case of suspected liver damage: lorazepam and oxazepam are treatment of choice, as they do not require metabolism by liver

# Management of AW: pharmacotherapy

- Three types of dosing strategies followed

## Fixed dose schedule

- Fixed dose of BZD administered at fixed intervals for initial few days followed by taper
- Useful for clinicians with relatively lesser experience in managing AW
- May result in administration in higher than necessary dose

## Symptom triggered dose schedule

- Dose and interval of BZD administration based on symptoms of AW measured by CIWA-AR
- Requires experience in management of AW
- Results in lesser dose of BZD used in management of AW

## Front loading dose schedule

- Large dose of BZD at the start of the treatment
- Later doses on 'as and when required' basis
- Used in severe AW cases, included DT

# Example of BZD dose for AW

## Treating alcohol withdrawal with chlordiazepoxide

Dosing Regimen	Day 1	Day 2	Day 3	Day 4
<b>Fixed dose</b>	20 to 30 mg four times daily	20 to 30 mg three times daily	20 to 30 mg twice daily	20 to 30 mg at bedtime
<b>Symptom-triggered</b>	20 to 30 mg as needed up to hourly, based on symptoms*			
<b>Front-loaded<sup>^</sup></b>	100 to 200 mg every 2 to 4 hours until sedation is achieved; then 50 to 100 mg every 4 to 6 hours as needed	50 to 100 mg every 4 to 6 hours as needed	50 to 100 mg every 4 to 6 hours as needed	None

\*These symptoms include pulse rate greater than 90 per minute, diastolic blood pressure greater than 90 mm Hg or signs of withdrawal.

<sup>^</sup> Frequently, very little additional medication is necessary after initial loading.

*Adapted from NICE guidelines, 2010*

# Suggested dose schedule for diazepam

- In case of moderate to severe withdrawals

Day	Diazepam dose
Day one	15 – 20 mg orally four times a day
Day Two	10 – 20 mg orally four times a day
Day Three	5 – 15 mg orally four times a day
Day Four	10 mg orally four times a day
Day Five	5 mg orally four times a day
Day Six	5 mg orally two – three times a day
Day Seven	5 – 10 mg orally at night
Day Eight	5 mg orally at night
Day Nine	Stop Diazepam

- In case of mild to moderate AW: doses of upto 20 – 40 mg diazepam per day

# Carbamazepine and Valproate

- Effective in:
  - Mild to moderate AW / protracted AW
  - ↓ distress and faster return to work
  - No abuse potential / alcohol interactions
  - No toxicity in 7-day trials
- Limitations:
  - Not better than BZDs
  - ↑ Side effects
  - ↑ Cost
  - Limited data in AW seizures/delirium

# Other Agents

- **Carbamazepine and valproate:**
  - Effective in mild to moderate withdrawals
  - Not more beneficial than Benzodiazepines
  - Not able to control all symptoms of AW
- **Antipsychotics:**
  - ↑ seizures, ↓ agitation
- **β-Adrenergic antagonists and clonidine:**
  - ↓ Autonomic activity, may hide impending seizures
- **Magnesium:**
  - ↓ levels in AW, supplement does not ↓ severity

# Management of AW: pharmacotherapy

- **Vitamin supplements**
  - **Thiamine SHOULD** be given along with pharmacological treatment
  - Given to avoid precipitation of Wernicke's encephalopathy and Korsakoff's syndrome
  - Dose: 50 – 100 mg parenteral (IM) or oral for 3 days or more

# Management of AW: non-pharmacological treatment

- Reducing environmental stimulation: Quiet surroundings
- Providing uninterrupted periods of rest
- Avoid use of restraints
- Provide orientation: with clocks and calendars
- Adequate nutritional support
- Brief interventions / motivate to change
- When planning discharge: offer long term treatment

# Conclusions

- AW common complication in Alcohol Dependence patients
- Clinicians must screen for alcohol withdrawal in every case of alcohol dependence
- If untreated, AW can be lead to death in sever cases
- BZD most effective, safest and cheapest treatment
- Concomitant use of thiamine supplements and supportive care required

**THANK YOU**