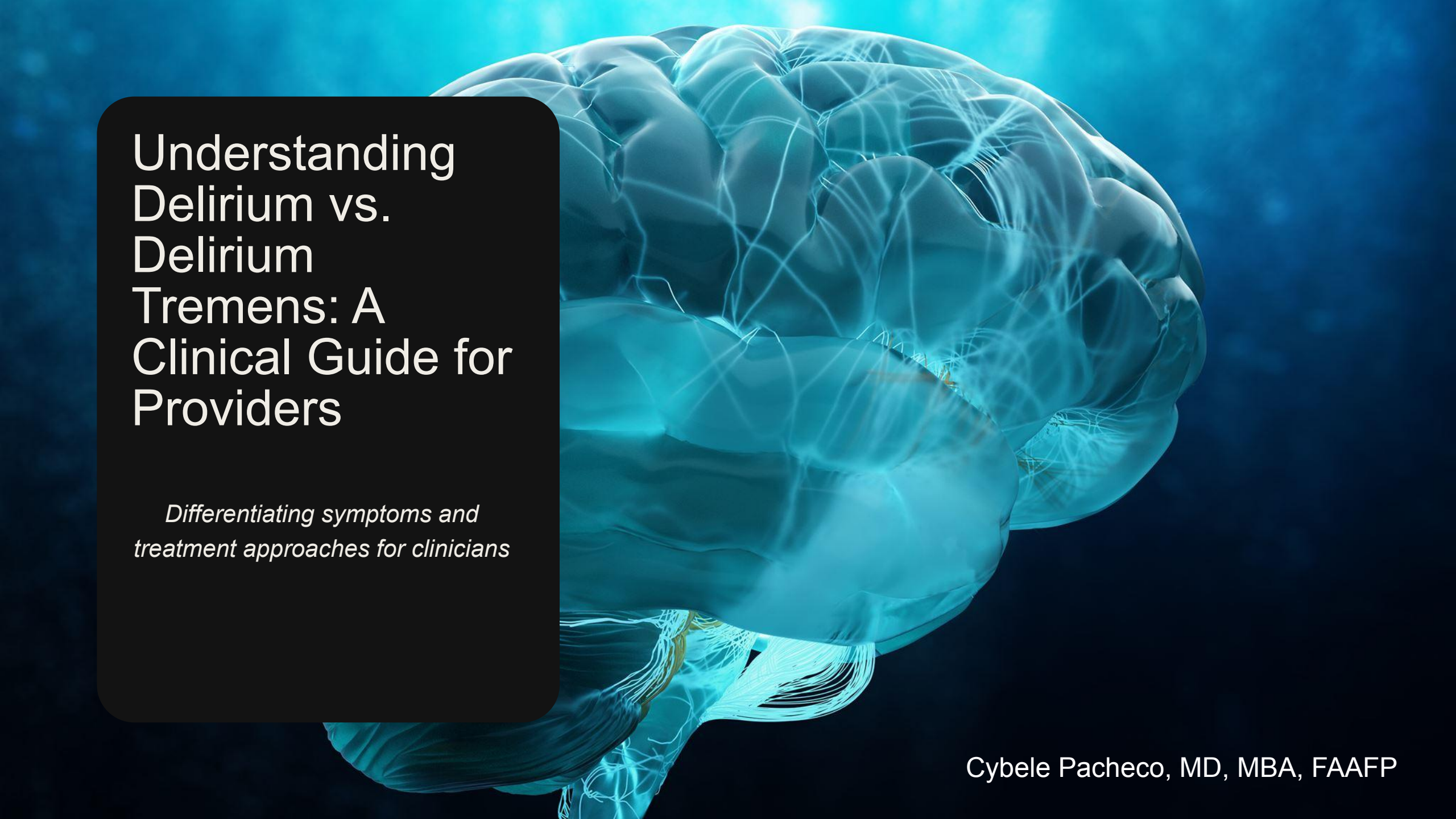


Understanding Delirium vs. Delirium Tremens: A Clinical Guide for Providers

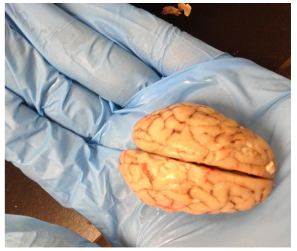
Differentiating symptoms and treatment approaches for clinicians

Cybele Pacheco, MD, MBA, FAAFP

Introduction & Overview

Objectives of the Presentation

Define Delirium and DTs



Clarify the definitions and distinctions between delirium and delirium tremens to establish a solid foundation for understanding.

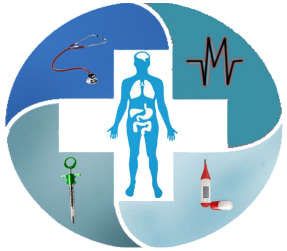
Clinical Features Overview

Explore the key clinical features and symptoms that differentiate delirium from delirium tremens for accurate identification.

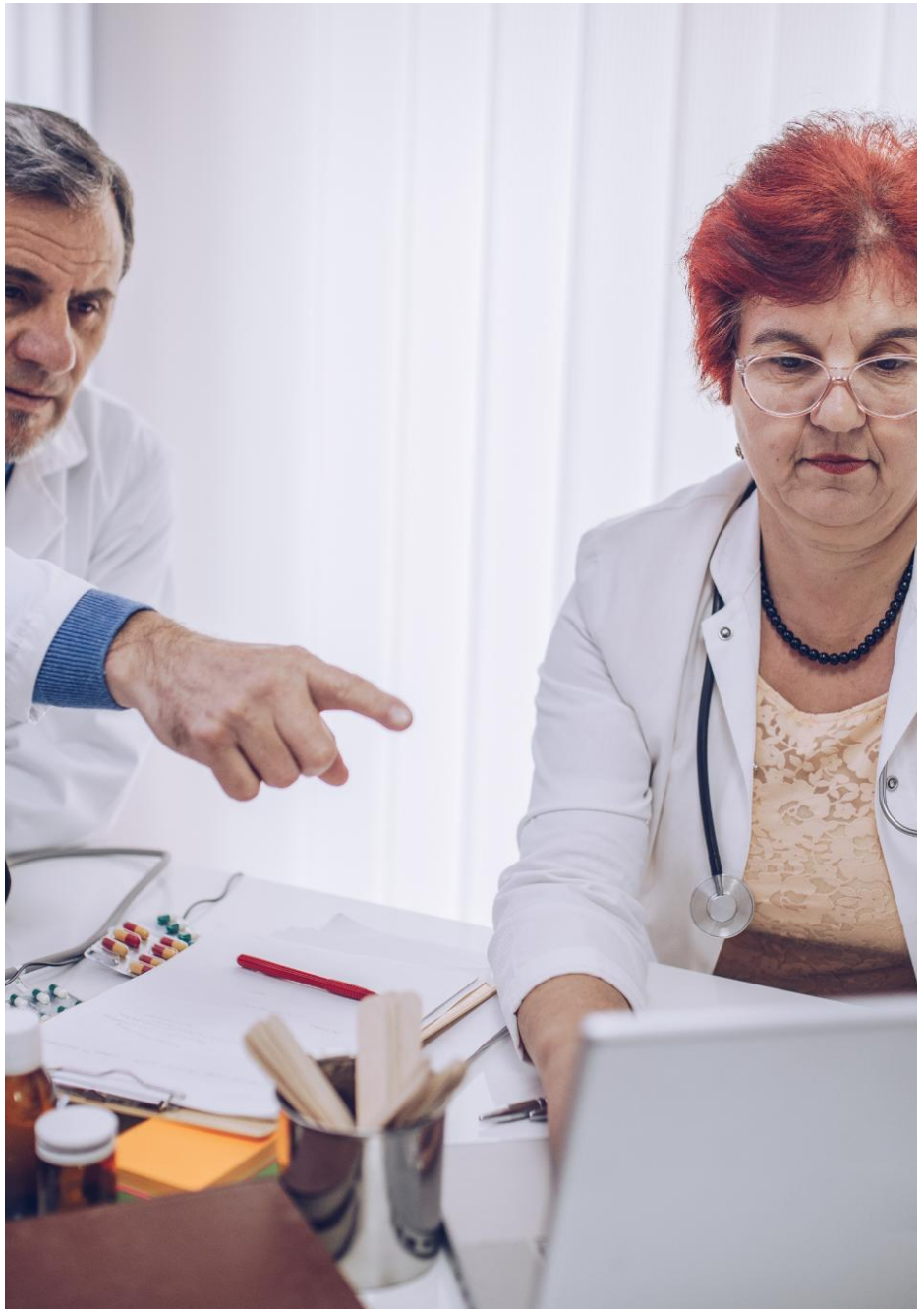
Assessment Tools Review

Review evidence-based assessment tools used to diagnose delirium and delirium tremens in clinical practice.

Treatment Strategies



Discuss effective treatment approaches to manage delirium and delirium tremens and improve patient outcomes.



Clinical Importance of Differentiation

Impact on Patient Safety

- Delirium and delirium tremens affect patient safety and can worsen clinical outcomes if not diagnosed promptly.

Risks of Misdiagnosis

- Delayed or incorrect diagnosis increases morbidity and mortality risks for patients experiencing acute confusion.

Importance of Accurate Diagnosis

- Accurate differentiation between delirium and delirium tremens ensures timely intervention and better patient care.

Healthcare Costs and Prevalence

- Both conditions contribute significantly to healthcare costs and are prevalent in acute care settings worldwide.

Delirium – Core Concepts

Definition and Etiology of Delirium

Delirium Definition

Delirium is an acute disturbance in attention and cognition with fluctuating symptoms throughout the day.

Infectious Causes

Infections such as urinary tract infections and pneumonia are common triggers of delirium.

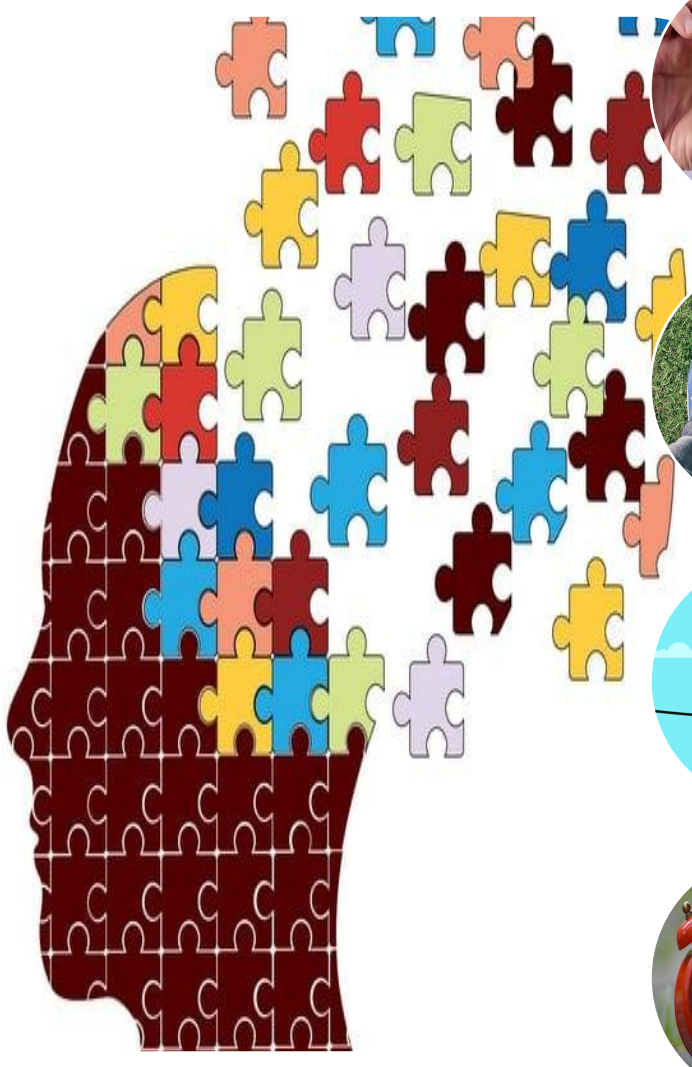
Metabolic Imbalances

Electrolyte disturbances and other metabolic imbalances can precipitate delirium symptoms.

Medication Effects

Certain medications, especially anticholinergics, can cause or worsen delirium.

Clinical Features and Risk Factors



Symptoms

- Symptoms include inattention, disorganized thinking, and altered consciousness levels.

Hypoactive and Hyperactive Forms

- Delirium can appear as hypoactive (quiet, withdrawn) or hyperactive (agitated, combative) types.

Risk Factors

- Key risk factors include advanced age, ICU stays, multiple medications, and sensory impairments.

Importance of Early Detection

- Recognizing risk factors aids early detection and prevention of delirium.

Assessment and Management Strategies

Delirium Assessment Tools

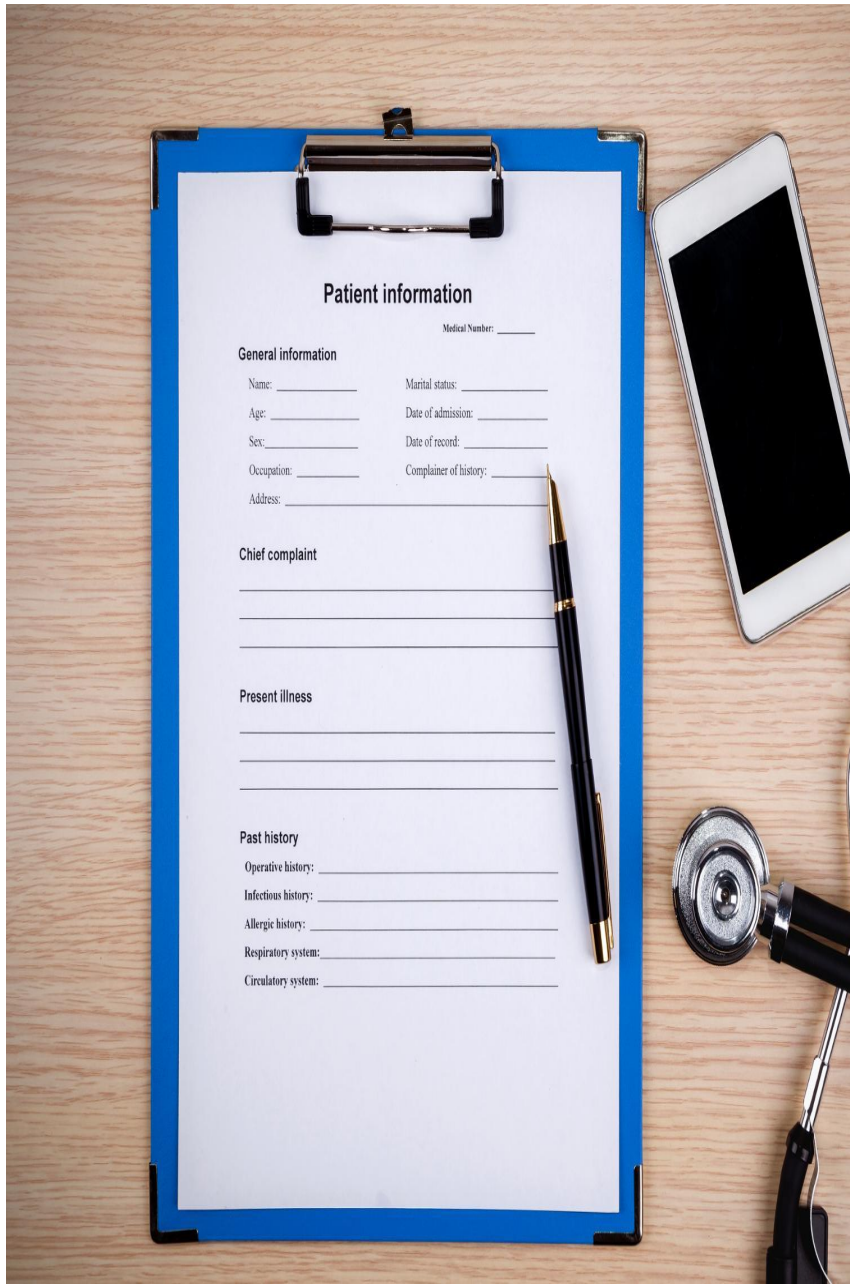
- Standard tools like CAM, 4AT, and Nu-DESC are used to effectively screen patients for delirium symptoms.

Management Approaches

- Effective management treats underlying causes, avoids sedation, and ensures supportive care including hydration and orientation.

Prevention Strategies

- Prevention involves sleep hygiene, early mobilization, and reviewing medications to reduce delirium risks.



Clinical Scenarios Demonstrating Delirium Assessment Tools

1. Confusion Assessment Method (CAM)

- A widely used tool for detecting delirium.
- Assesses four key features:
  - **Acute onset and fluctuating course**
  - **Inattention**
  - **Disorganized thinking**
  - **Altered level of consciousness**
- Delirium is diagnosed if features 1 and 2 are present, plus either 3 or 4.

2. 4AT (4 A's Test)

- A rapid screening tool for delirium and cognitive impairment.
- Includes four components:
  - **Alertness**
  - **Abbreviated Mental Test-4 (AMT4)** – checks orientation and memory.
  - **Attention** – tested by asking the patient to say months backward.
  - **Acute change or fluctuating course**
- Designed for quick use in emergency and acute care settings.

3. Nu-DESC (Nursing Delirium Screening Scale)

- Used by nurses for routine delirium screening.
- Evaluates five domains:
  - **Disorientation**
  - **Inappropriate behavior**
  - **Inappropriate communication**
  - **Illusions or hallucinations**
  - **Psychomotor retardation**
- Scoring helps identify patients needing further evaluation.

Basic Treatment Strategies for Acute Delirium

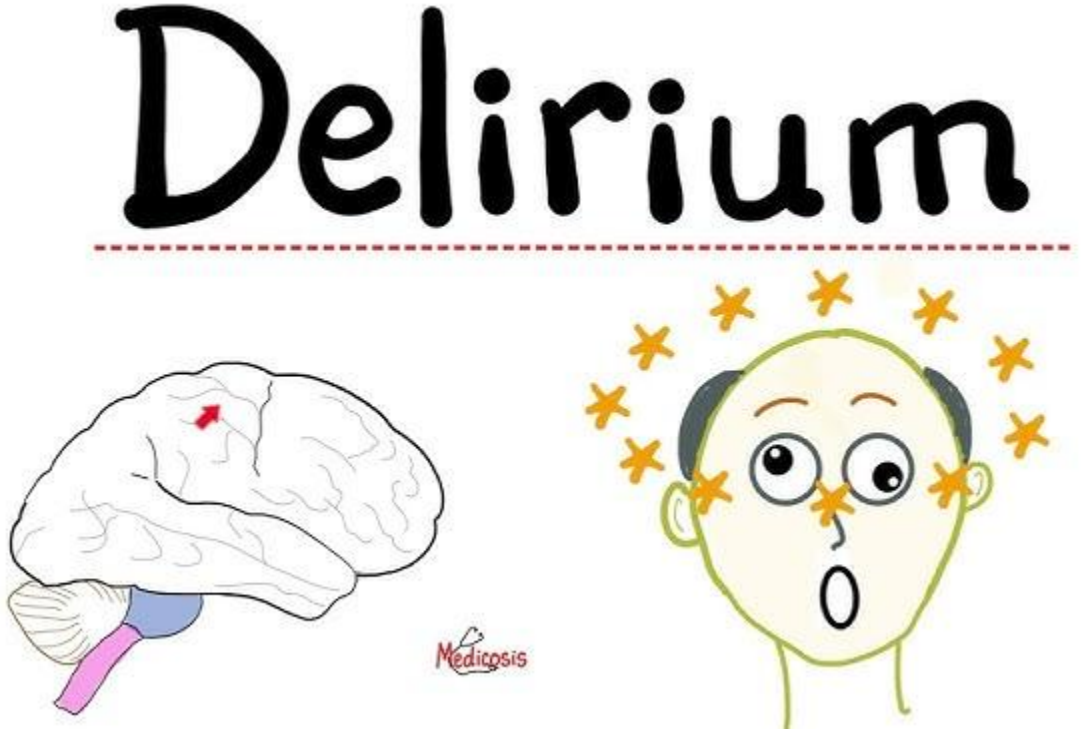
Identify and Treat Underlying Causes
- Address infections, metabolic imbalances, and medication effects.

Avoid Unnecessary Sedation
- Minimize use of sedatives; prefer non-pharmacologic interventions.

Supportive Care
- Ensure hydration, orientation aids, mobility, and sleep hygiene.

Use Assessment Tools
- Apply CAM, 4AT, and Nu-DESC for detection and monitoring.

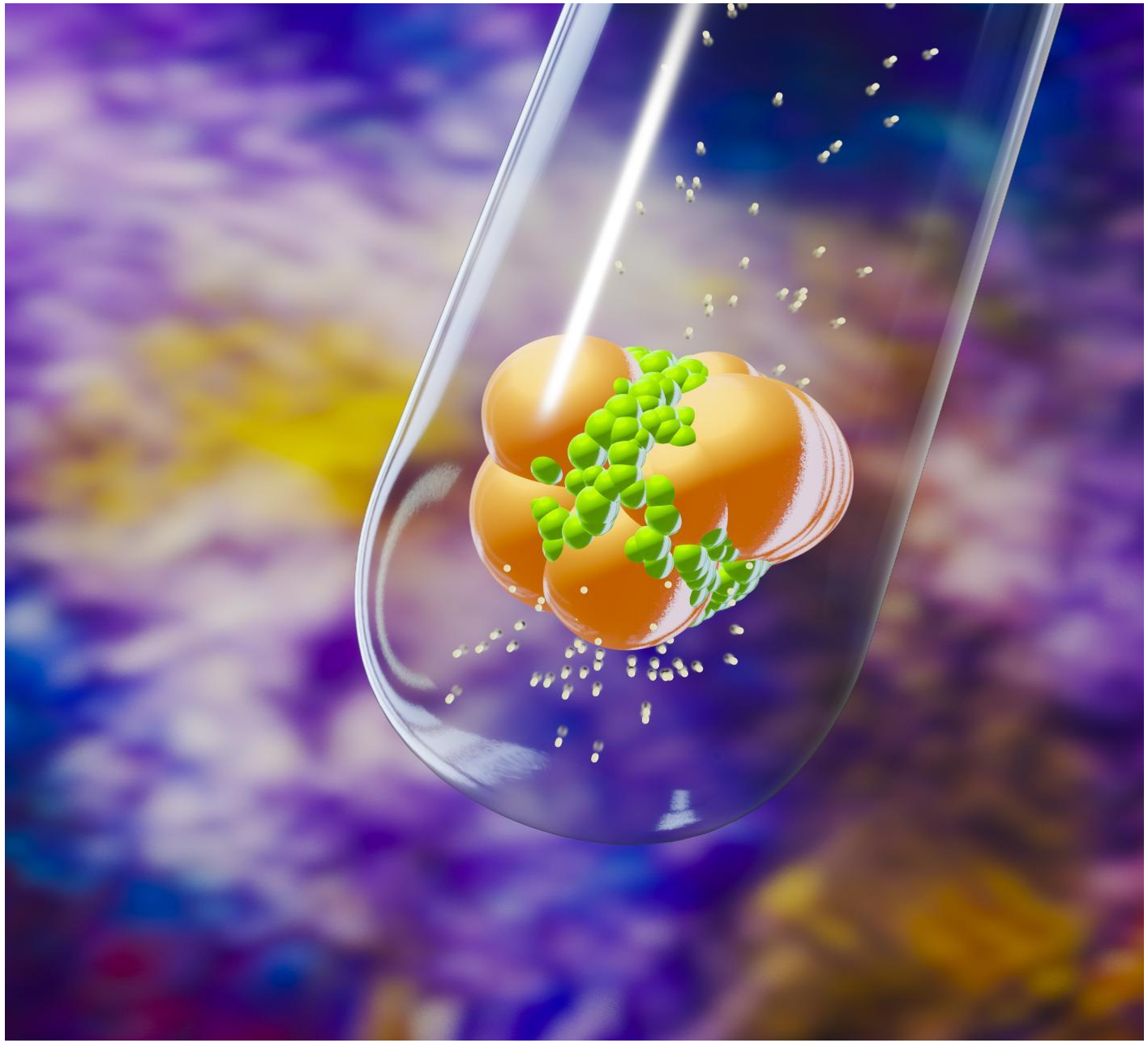
Prevention Strategies
- Review medications, use sensory aids, and modify environment.



Delirium Tremens – Core Concepts

Definition and Pathophysiology of DTs

Delirium Tremens Overview	Neurotransmitter Imbalance	Clinical Importance
Delirium tremens is a severe alcohol withdrawal syndrome featuring delirium and autonomic instability requiring urgent care.	DTs result from GABA receptor downregulation and glutamate receptor upregulation, causing CNS hyperexcitability.	Understanding DT pathophysiology aids in anticipating complications and guiding effective treatment strategies.



Clinical Features and Risk Factors

Onset and Duration

- Delirium tremens usually starts 48 to 72 hours after last alcohol intake and can last several days.

Key Symptoms

- Symptoms include tremors, hallucinations, agitation, and autonomic instability like tachycardia and hypertension.

Risk Factors

- Risk factors are chronic alcohol use, prior DT episodes, and other underlying medical conditions.

Importance of Early Recognition

- Early identification of DTs is critical to ensure timely and effective treatment management.

CIWA-Ar (Clinical Institute Withdrawal Assessment for Alcohol, revised)

Key Features:

- **Scoring system** based on 10 symptoms:
  - Nausea/vomiting
  - Tremors
  - Paroxysmal sweats
  - Anxiety
  - Agitation
  - Tactile disturbances
  - Auditory disturbances
  - Visual disturbances
  - Headache
  - Orientation/clouding of sensorium

CIWA-Ar Tool

- **Purpose:** Used to assess the severity of alcohol withdrawal symptoms and guide treatment decisions

Clinical Use:

- Administered regularly (e.g., every 1–4 hours) during withdrawal.

Score interpretation:

- **0–9:** Minimal withdrawal
- **10–19:** Mild to moderate withdrawal
- **20+:** Severe withdrawal; requires aggressive treatment

Guides **benzodiazepine dosing** and escalation of care.

Helps determine need for **ICU monitoring** in severe cases.

Benefits:

- Improves safety and comfort during detoxification.
- Reduces risk of complications like seizures and respiratory failure.

Basic Treatment Strategies for Acute Delirium Tremens (DT's)

CIWA-Ar Tool: Guides severity assessment and treatment decisions.

Benzodiazepines : First-line pharmacologic agents.

Supportive Care: Hydration, electrolytes, calm environment.

ICU Monitoring: For severe symptoms or autonomic instability.

Interdisciplinary Team: Physicians, nurses, pharmacists, behavioral health, case managers.

Why Benzodiazepines:

🧪 Mechanism of Action

·Benzodiazepines enhance **GABAergic activity**, which is suppressed during alcohol withdrawal.
·This helps **calm the CNS**, reducing agitation, tremors, and the risk of seizures.

💊 Clinical Use in DTs

·**First-line treatment** for DTs due to their effectiveness in:
·Controlling **autonomic instability** (e.g., tachycardia, hypertension)
·Preventing **seizures**
·Reducing **hallucinations and agitation**
·Common agents: **Lorazepam**, **Diazepam**, **Chlordiazepoxide**

📊 Dosing Guided by CIWA-Ar

·The **CIWA-Ar tool** helps determine the severity of withdrawal and guides benzodiazepine dosing:
·**Mild (10–19)**: Scheduled or symptom-triggered dosing
·**Severe (20+)**: Aggressive dosing, possibly requiring ICU monitoring

🛡️ Benefits

·Improves **patient safety and comfort** during detoxification
·Reduces risk of **complications** like seizures, delirium progression, and respiratory failure
·Allows for **controlled tapering** of withdrawal symptoms

Comparison and Clinical Decision-Making

Key Differences Between Delirium and DTs

Causes and Triggers

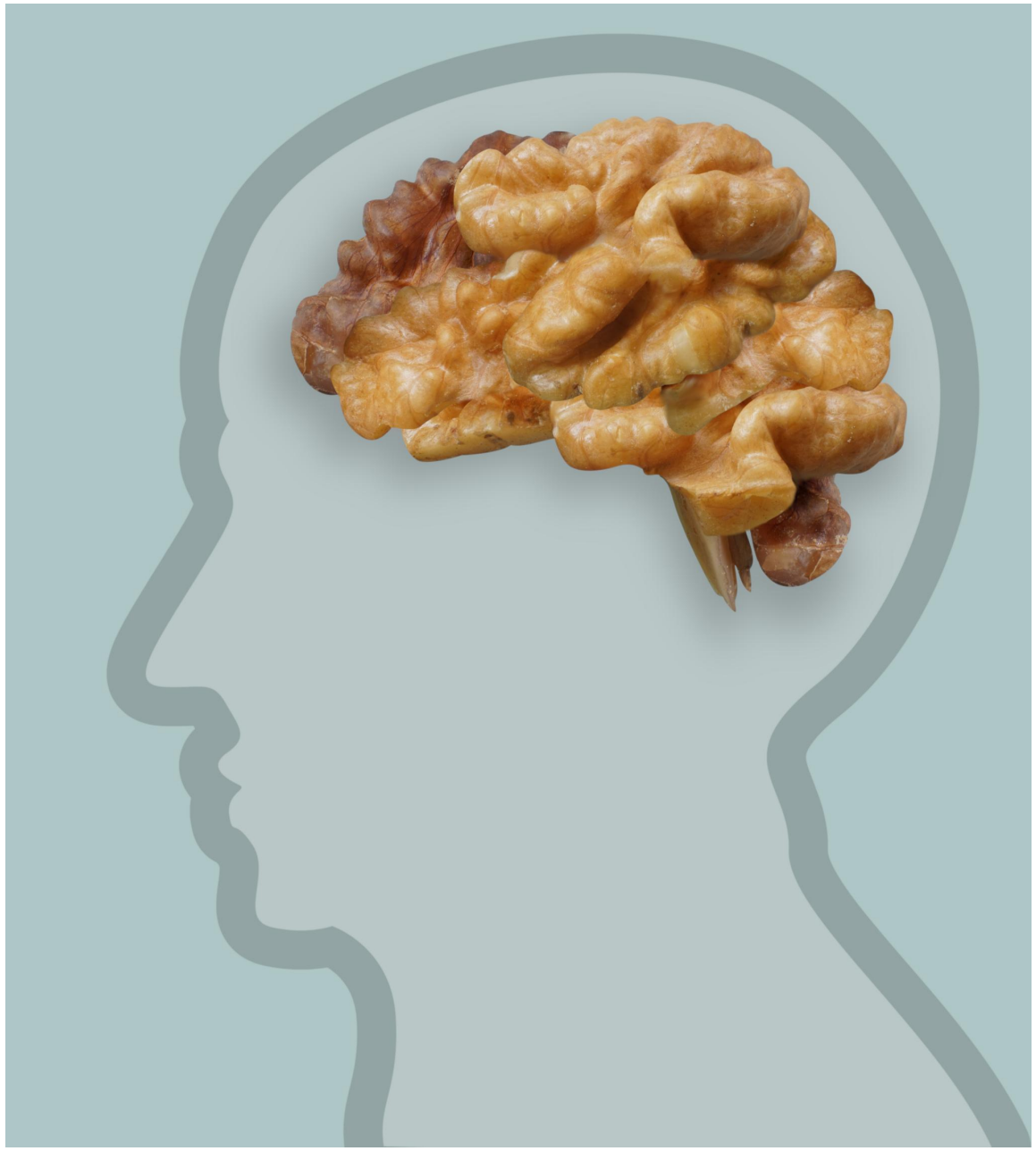
Delirium often results from multiple factors unrelated to substances, while DTs specifically arise from alcohol withdrawal.

Symptom Presentation

Delirium may show hypoactive symptoms, whereas DTs typically present with hyperactivity and autonomic instability.

Treatment Importance

Accurate diagnosis is crucial since treatment strategies for delirium and DTs differ significantly.



Case Studies and Diagnostic Algorithm

Case Study 1: UTI with Delirium

Elderly patient with urinary tract infection showing hypoactive delirium treated by hydration and infection management.

Case Study 2: Alcohol Withdrawal

Middle-aged male with alcohol withdrawal treated using CIWA-Ar scoring, benzodiazepines, and ICU support.

Diagnostic Algorithm

Clinical algorithm guides diagnosis by evaluating history, symptom timing, and assessment tools to differentiate conditions.

Case 1:

Age: 78
Presents to ED with:
Sudden confusion and disorientation
Difficulty focusing attention
Mild agitation, no tremors or hallucinations, Symptoms fluctuate throughout the day,
Mild fever and a flushed

VS:
Temperature: 100.4°F (38°C)
BP: 124/68
Pulse: 100
RR: 16 **Work up:**
CBC (Complete Blood Count):

- WBC: 13.2 x10^9/L (elevated)
- Neutrophils: 82% (elevated)
- Hemoglobin: 12.5 g/dL
- Platelets: 220 x10^9/L

Basic Metabolic Panel (BMP):

- Sodium: 134 mmol/L (mild hyponatremia)
- BUN: 22 mg/dL
- Creatinine: 1.1 mg/dL
- Glucose: 98 mg/dL

Case 2:

Age: 68
Presents to ED with:
Sudden confusion and disorientation
Difficulty focusing attention
Mild agitation, no tremors or hallucinations, Symptoms fluctuate throughout the day,
Mild fever and a flushed

VS:
Temperature: 100.4°F (38°C)
BP: 124/68
Pulse: 100
RR: 16 **Work up:**
CBC (Complete Blood Count):

- WBC: 13.2 x10^9/L (elevated)
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Interdisciplinary Roles in Management

1. Physicians

- Lead diagnosis and treatment planning.
- Prescribe pharmacologic interventions (e.g., benzodiazepines guided by CIWA-Ar).
- Monitor for complications like seizures or autonomic instability.

2. Nurses

- Conduct routine screening (e.g., Nu-DESC).
- Monitor vital signs and mental status changes.
- Administer medications and provide supportive care.
- Communicate changes promptly to the care team.

3. Pharmacists

- Review and manage medication regimens.
- Ensure safe dosing of sedatives and adjunct therapies.
- Prevent drug interactions and optimize pharmacologic strategies.

4. Behavioral Health Professionals

- Provide psychological support and counseling.
- Address underlying substance use disorders.
- Facilitate post-acute care planning and recovery support.

5. Case Managers/Social Workers

- Coordinate discharge planning and follow-up care.
- Connect patients with community resources and addiction services.

Wrap-Up and Resources

Summary of Key Takeaways

Differentiating Delirium and DTs

Delirium and delirium tremens are distinct conditions requiring different treatment approaches for effective management.

Managing Delirium

Delirium is multifactorial and managed by addressing underlying causes with supportive care.

Treatment of Delirium Tremens

DTs are specific to alcohol withdrawal and require aggressive pharmacologic intervention.

Interdisciplinary Care Importance

Using assessment tools and teamwork improves outcomes for patients with delirium and DTs.

References and Educational Resources

Clinical Guidelines

Includes important clinical guidelines such as DSM-5, CIWA-Ar, CAM, and 4AT for healthcare reference.

Educational Toolkits

Provides educational toolkits and further reading materials to support ongoing provider education and skill development.