Altered Mental Status

Aliases

Confusion, altered level of consciousness

Patient Care Goals

1. Identify treatable causes.
2. Perform appropriate assessment and diagnostics (e.g., oxygen saturation, glucose check, and monitor).
3. Protect patient from complications of altered mental status (e.g., respiratory failure, shock, cardiopulmonary arrest).

Patient Presentation

Inclusion Criteria

Impaired decision-making capacity

Exclusion Criteria

Traumatic brain injury

Patient Management

Assessment

Look for treatable causes of altered mental status:

1. Airway: make sure airway remains patent; reposition patient as needed.
2. Breathing: look for respiratory depression; check SPO_2, $ETCO_2$, and CO detector readings.
3. Circulation: Look for signs of poor perfusion
4. Glasgow Coma Score and/or AVPU—document
5. Pupils: document findings
6. Head and neck: Evaluate for signs of trauma
7. Neck: look for rigidity or pain with range of motion.
8. Stroke assessment tool including focal neurologic findings
9. Blood glucose level: treat if applicable
10. ECG Evaluate for Arrhythmia limiting perfusion
11. Breath odor: look for possible unusual odors such as alcohol, acidosis, or ammonia.
12. Chest/Abdominal: intra-thoracic hardware, assist devices, abdominal pain or distention, signs of trauma
13. Extremities/skin: look for track marks, hydration, edema, dialysis shunt; assess temperature to touch (or if able, use a thermometer).
14. Signs of infection: Fever, cough, skin changes, dysuria
15. Environment: Survey for pills, paraphernalia, substance use, medication patches, medical devices, ambient temperature, social indicators of neglect, carbon monoxide exposures, multiple casualties with same complaint

Treatment and Interventions

1. Administer **oxygen** as appropriate for dyspnea or distress with a target of achieving greater than 93% saturation for most acutely ill patients [see Universal Care guideline].
2. Assess **blood glucose** [see Hypoglycemia or Hyperglycemia guidelines]
3. Consider **naloxone** [see Opioid Poisoning/Overdose guideline]
4. Consider restraint: physical and chemical [see Agitated or Violent Patient/Behavioral Emergency guideline]
5. Active cooling or warming [see Hypothermia/Cold Exposure or Hyperthermia/Heat Exposure guidelines]

6. Consider normal saline or lactated Ringer's IV/IO fluid bolus 20 ml/kg ***[AEMT]*** [see fluid administration doses in Shock and Hypoglycemia or Hyperglycemia guidelines]
7. Consider anti-dysrhythmic medication [PARA] [see Cardiovascular section guidelines for specific dysrhythmia guidelines]
8. **Vasopressors *[PARA]*** [see Shock guideline]

Patient Safety Considerations

- With depressed mental status, initial focus is on airway protection, oxygenation, ventilation, and perfusion.
- The violent patient may need pharmacologic and/or physical management to insure proper assessment and treatment. [see Agitated or Violent Patient/Behavioral Emergency guideline].
- Hypoglycemic and hypoxic patients can be irritable and violent [see Agitated or Violent Patient/Behavioral Emergency guideline].

Notes and Educational Pearls Key Considerations

- History from bystanders
- Age of the patient
- Development age and baseline functional status
- Consider the differential diagnosis using the mnemonic AEIOU-TIPS:
    - A – Alcohol, Abuse, Atypical migraine
    - E – Epilepsy, Electrolytes
    - I – Insulin (hypoglycemia)
    - O – Oxygen, Overdose
    - U – Uremia (kidney failure)
    - T – Trauma, Tumor
    - I – Infection
    - P – Psych, Poisoning
    - S – Seizure, Subarachnoid hemorrhage, Sepsis
- Environment where patient found
- Recent complaints (e.g. headache, chest pain, difficulty breathing, vomiting, fever)
- Pill bottles/medications:
    - Anticoagulants
    - Anti-depressants
    - Narcotic pain relievers
    - Benzodiazepines
    - Metabolic altering medications (thyroid meds, prednisone, weight lifting supplements, weight loss supplements)
- Medical alert tags and accessory medical devices
- Evaluate for reduced PO intake and/or vomiting and/or diarrhea or dehydration as a cause of AMS in the pediatric and geriatric populations
- Medications a child may have access to including but not limited to:
    - Analgesic
    - Antidepressants
    - Antihypertensives/Cardiac medications
    - Oral hypoglycemic
    - Opioids
    - Benzodiazepines
    - Antiepileptics
    - Prenatal vitamins

Pertinent Assessment Findings

- Intravenous injection marks
- Breath odor

- Skin temperature
- Location

Quality Improvement

Associated NEMSIS Protocol(s) (eProtocol.01)

- 9914113—Medical-Altered Mental Status

Key Documentation Elements

- GCS or AVPU description was documented.
- Temperature was taken when able.
- Patient and medic safety were considered.
- Pupil and neck exam were done.

Performance Measure

- Hypoglycemia considered and treated appropriately.
    - Blood glucose level obtained..
        - ***EMS Compass® Measure*** *(for additional information, see www.emscompass.org) Hypoglycemia-01: Treatment administered for hypoglycemia.* Measure of patients who received treatment to correct their hypoglycemia
- Sepsis considered as a possible cause of hypotension.
- Hypotension appropriately treated.
- Naloxone is used as therapeutic intervention, not a diagnostic tool.
- CO detector is used when available

References

1. Frisch A, Miller T, Haag A, Martin-Gill C, Guyette FX, Suffoletto BP. Diagnostic accuracy of a rapid checklist to identify delirium in older patients transported by EMS. *Prehosp Emerg Care,* 2013 Apr-Jun; 17(2): 230-4.
2. Kumar A, Roberts D et al. Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock. *Crit Care Med,* 2006 Jun; 34(6): 1,589–96.
3. Leong LB, Jian KH, Vasu A, Seow E. Prospective study of patients with altered mental status: clinical features and outcome. *Int J Emerg Med,* 2008 Sep; 1(3): 179–82.