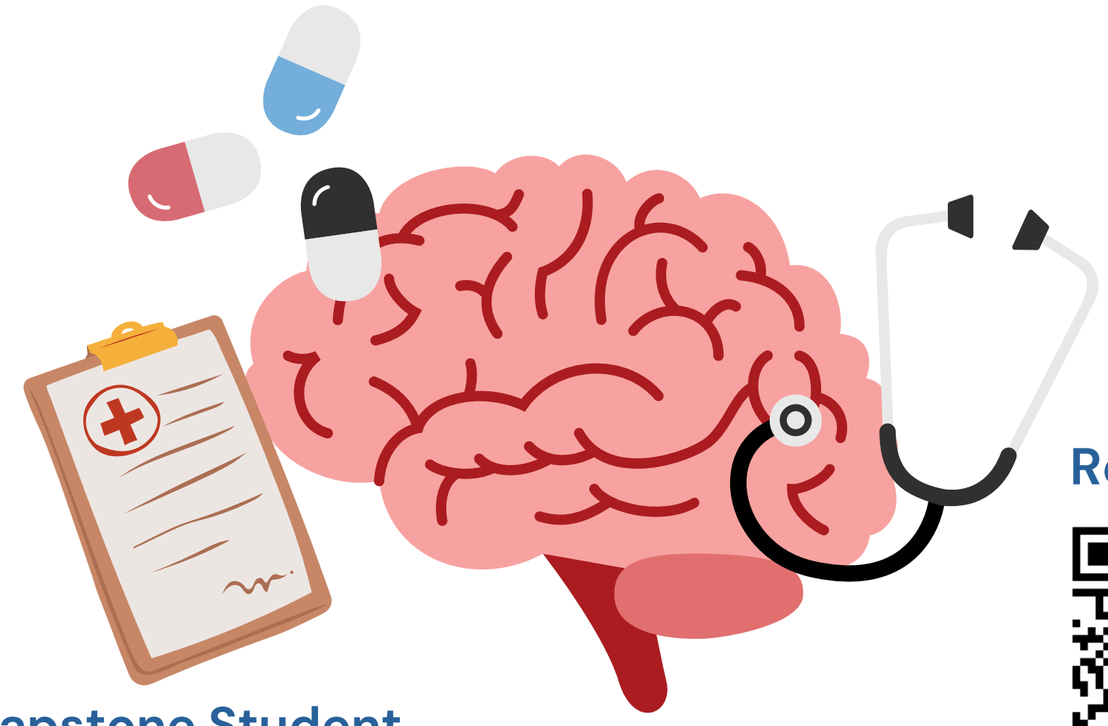
Iatrogenic Sedation Withdrawal Management



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References

Iatrogenic Withdrawal Syndrome (IWS)

- Set of symptoms that manifest as a result of sudden discontinuation, decrease in drug dose, or prolonged use of analgesics & sedative medication
- Risk factors: young age, high cumulative doses of sedatives, prolonged exposure, medication route, and types of sedatives

(Valentine & Kummick, 2022)
(Tiacharoen et al., 2020)

Signs & Symptoms

CNS irritability: hallucinations, convulsions, tremors, irritability, dilated pupils

GI disturbance: abdominal pain, vomiting, diarrhea

Autonomic disturbance: fever, tachycardia, tachypnea, sweating, yawning, chills, increased secretions

(Leicester Children's Hospital, 2021)

Why is it a problem?

- No standardized weaning protocol for withdrawal assessment with clear guidelines to reduce IWS
- Unclear manifestations of IWS
  - Overlap with agitation due to inadequate pain management, intubation, and illnesses

(Habib et al., 2021)

Supportive Evidence

- Recognize the relationship between dose and drug exposure duration
- Acknowledge age-related pharmacological differences

(Valentine & Kummick, 2022)

- Use validated scoring tools → Withdrawal Assessment Tool-1 (WAT-1)

(McAlister et al., 2022)

- Randomized Controlled Trial (Tiacharoen et al., 2020)
  - Evaluate the effects of drug and weaning protocols in managing sedation withdrawal
  - Fentanyl was changed to oral methadone & midazolam was changed to oral lorazepam based on patient weight and conversion ratios
    - Conclusion: Intervention group had a shorter weaning phase during the initial period & lower cumulative dose of morphine for rescue therapy
- Prospective observational study (Sanavia et al., 2019)
  - Plan was designed based on considerations such as sedative & pain medication properties, mechanism of action, and pharmacokinetics
  - Evaluate the effect of a sedative and analgesic drug rotation protocol.
    - Conclusion: Patients requiring prolonged sedation experienced a reduction in withdrawal syndrome with protocol adherence
- Retrospective observational (Geven et al., 2021)
  - Dexmedetomidine will be supplemented if sedation is insufficient
    - Conclusion: Dexmedetomidine did not prevent IWS but additive doses of midazolam contributed a major risk factor in developing IWS

Withdrawal Assessment Tool (WAT-1)

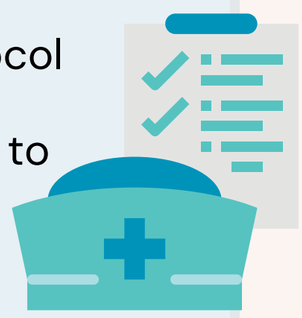
- **Information from previous 12 hours**
  - Presence of loose/watery stools
  - Presence of vomiting/wretching/gagging
  - Temperature > 37.8°C
- **2-minute pre-stimulus observation**
  - Status
  - Tremor
  - Any sweating
  - Uncoordinated/repetitive movement
  - Yawn or sneeze
- **1-minute stimulus observation**
  - Startle to touch
  - Muscle tone
- **Post-stimulus recovery**
  - Time to gain calm state

Score > 3 indicates withdrawal!

(Leicester Children's Hospital, 2021)

Nurse Implementation

- Important to assess comfort and sedation levels & adjust analgesic/sedative treatment
- Apply nurse-driven models about sedation protocol to decrease withdrawal symptoms
- Use drug rotations with sedatives and analgesics to reduce IWS risk
- Understand side effects and consequences of pharmacological therapy
- Prevent & treat with medications of the same family
- Screen with WAT-1



(McAlister et al., 2022)
(Geven et al., 2021)
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