APPROACH TO SEDATIVES/HYPNOTICS/OPIOID TOXIDROMES

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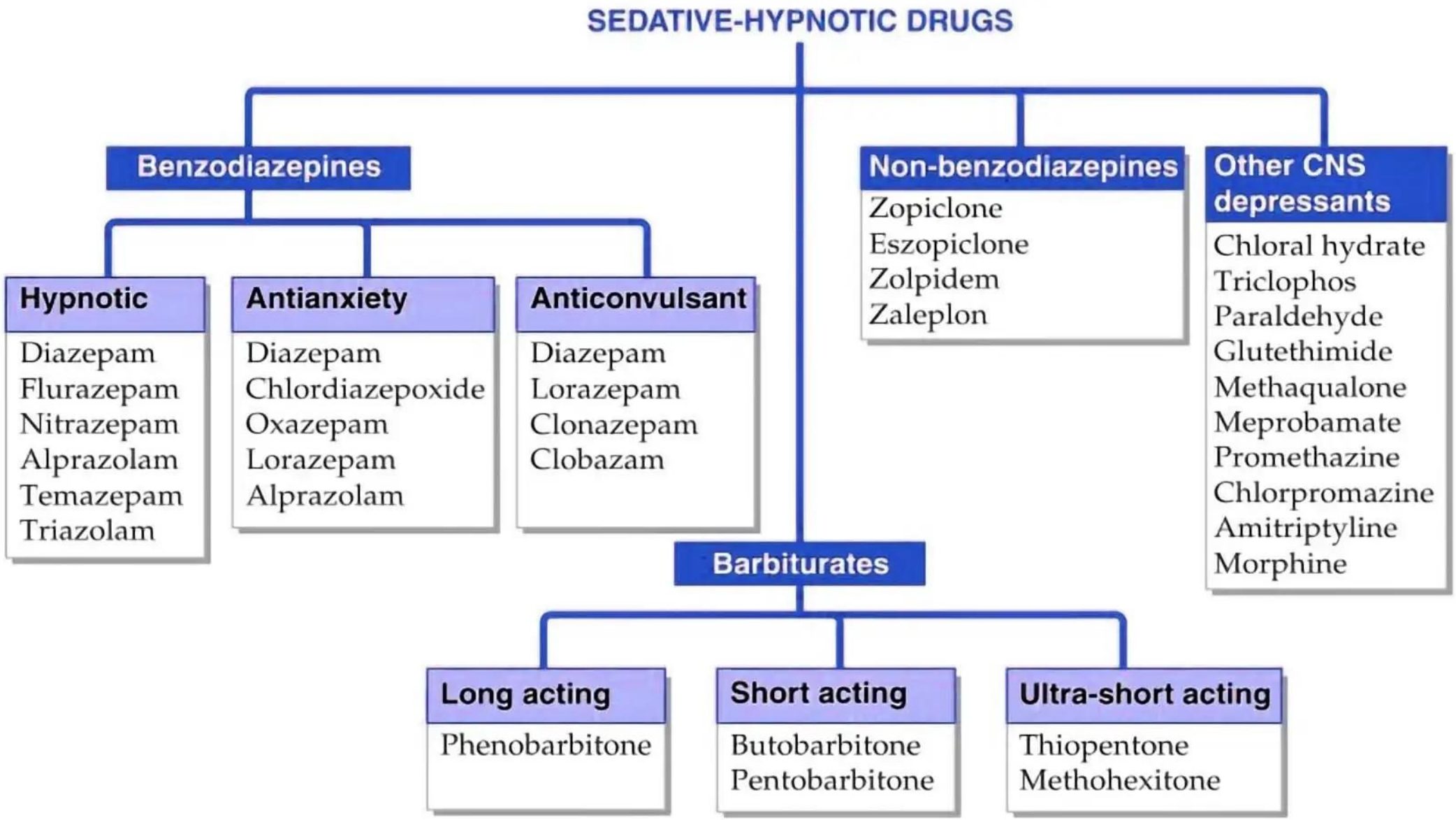
OBJECTIVES

- key history in a patient with suspected S/H/O toxidrome
- Signs and symptoms of the toxidromes
- Possible causes and differential diagnoses
- Clinical investigations in a patient with suspected toxidrome
- Management of a patient with S/H/O toxidrome
- Critical documentation and the ED disposition plan of a patient with suspected S/H/O toxidrome

SEDATIVES AND HYPNOTICS

- Multiple classes of drugs that induce calmness by reducing irritability or excitement and promote or improve sleep.
- They include Barbiturates, Benzodiazepines and z- class of drugs
- Act by depressing the CNS.
- Don’t affect mood or pain threshold.
- Used to treat anxiety, seizures, withdrawal states, insomnia, agitation and procedural sedation.


SEDATIVE-HYPNOTIC DRUGS
Benzodiazepines
Hypnotic
Diazepam
Flurazepam
Nitrazepam
Alprazolam
Temazepam
Triazolam
Antianxiety
Diazepam
Chlordiazepoxide
Oxazepam
Lorazepam
Alprazolam
Anticonvulsant
Diazepam
Lorazepam
Clonazepam
Clobazam
Non-benzodiazepines
Zopiclone
Eszopiclone
Zolpidem
Zaleplon
Other CNS depressants
Chloral hydrate
Triclophos
Paraldehyde
Glutethimide
Methaqualone
Meprobamate
Promethazine
Chlorpromazine
Amitriptyline
Morphine
Barbiturates
Long acting
Phenobarbitone
Short acting
Butobarbitone
Pentobarbitone
Ultra-short acting
Thiopentone
Methohexitone

What are Opioids

- Are substances that act on opioid receptors to produce morphine-like effects.

- Source: Exudate of the opium poppy (Papaver somniferum).

- What is the difference between opioids and opiates

1-opioid*:* is the synthetic form that gives the mentioned effect.

2-Opiate: it's the natural form (MORPHINE).

Table 12.1. Types of Opioid Drugs

	NATURAL	SEMISYNTHETIC	SYNTHETIC
Source	Naturally occurring	Derived from natural opioids	Synthesized independently
Chemical Structure	Typical	Similar	Dissimilar
Examples	Morphine Codeine	Hydromorphone Oxymorphone Hydrocodone Oxycodone Heroin	Methadone Fentanyl Meperidine Tramadol

Opioids act on 3 main receptors which are a group of inhibitory G protein-coupled receptors with opioids as ligands

receptor	Effect
MU μ	• Located at supraspinal and spinal sites • Analgesia and respiratory depression • Mioisis, euphoria, reduced GI motility
Kappa (K)	• Dorsal horn of spinal cord and brain stem • Analgesia, miosis, sedation
Delta (δ)	• Binding sites for endogenous peptides • Analgesia, dysphonia, delusions, hallucinations

Key history

Standard SAMPLE format for obtaining information.

- S: Either by questioning or direct observation
- A: Hx of allergy should elicited. In the case of drug-to-drug interaction.
- M: Either prescribed or illegal substances.
- P: Offers clues as to what medication is likely being taken.
- L: Last meal, amount and time of ingestion
- E: Clues from the event surrounding the incident.

Epidemiology

- Most common cause of polysubstance overdose and death.
- Co-prescription increases the risk of overdose and death by 2 to 5-fold. (1-3)
- 1 in 5 outpatient visits opioid prescription also involved a co-prescribed benzodiazepine.(4)
- The exact prevalence is not fully understood in Uganda.
- Legalization of controlled drugs OTC prescription in the context of palliative care.(2004 Act)

Possible causes of these toxidromes

- Substance abuse
- Unintentional and intentional overdose
- Therapeutic drug errors
- Self-medication
- Drug to drug interaction

Risks;

Taking escalating doses

Chronic use

Being male for opioids and female for sedatives

Being young

Combining of opioids and sedatives

Associated medical condition..malignancy, psychiatry

Clinical presentation

Toxidrome	Skin	CNS/Mental state	Pulmonary	Cardiovascular	Gastrointestine
OPIOIDs	Needle track marks Urticaria Pruritus Flushing Hypothermia	Drowsiness Seizures AMS Lethargy Reduced LOC Miosis	Reduced RR Hypoxia Dyspnea Wheezing	Hypotension	Nausea/vomiting Constipation
SEDATIVE-HYPNOTICS	Normal w/out needle marks	Depressed consciousness Ataxia Confusion Somnolence Slurred speech Nystagmus	Respiratory depression Reduced RR	+/_ hypotension	

Sedative-Hypnotic Toxidrome

- CNS depression
- Slurred speech
- Ataxia

↓

- Coma/stupor
- Respiratory depression → apnea
- Hypotension
- Hypothermia

EMNote.org

Narcotic (Opioid) Toxidrome

Mnemonic: "CPR-3H"

C : Coma

P : Pinpoint pupils

R : Respiratory depression

H : Hypotension

H : Hypothermia

H : Hyporeflexia

NOTE: Meperidine (*Demerol*) will not cause miosis

Antidote: Naloxone

Start with **0.04 mg** and titrate up q 2-3 min as need for ventilation to 0.5 mg, 2 mg, 5 mg, up to max 10-15 mg

Differential diagnoses

Metabolic	Hypoglycemia Hypothermia Hypernatremia Hypercalcemia DKA
Structural	Traumatic brain injury
Infectious	Meningitis Encephalitis
Toxins	Carbon monoxide poisoning Cyanide poisoning Clonidine poisoning Ethanol toxicity Neuroleptic agents

THANK YOU!

References

- [DOI] [PMC free article] [PubMed] [Google Scholar]
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Opioid withdrawal ..