

Acetylcholinesterase Inhibitors (Carbamates, Nerve Agents, Organophosphates) Exposure

Aliases

Acetylcholinesterase inhibitor	Carbamate	Insecticide
Nerve agent	Organophosphate	Pesticide
Weapons of mass destruction (WMD)		

Patient Care Goals

1. Rapid recognition of the signs and symptoms of confirmed or suspected acetylcholinesterase inhibitor (AChEI) agents such as carbamates, nerve agents, or organophosphates exposure followed by expeditious and repeated administration of atropine, the primary antidote
2. Carbamates and organophosphates are commonly active agents in commercial insecticides
3. Accidental carbamate exposure rarely requires treatment

Patient Presentation

Inclusion Criteria

1. DUMBELS is a mnemonic used to describe the signs and symptoms of acetylcholinesterase inhibitor agent poisoning. All patient age groups are included where the signs and symptoms exhibited are consistent with the toxicome of DUMBELS
 - a. **Diarrhea**
 - b. **Urination**
 - c. **Miosis/Muscle** weakness
 - d. **Bronchospasm/Bronchorrhea/Bradycardia** (*the killer Bs*)
 - e. **Emesis**
 - f. **Lacration**
 - g. **Salivation/Sweating**

Exclusion Criteria

None noted

Patient Management

1. Don the appropriate PPE
2. Remove the patient's clothing and wash the skin with soap and warm water
 - a. Acetylcholinesterase inhibitor agents can be absorbed through the skin
 - b. Contaminated clothing can provide a source of continued exposure to the toxin
3. Rapidly assess the patient's respiratory status, mental status, and pupillary status
4. Administer the antidote atropine immediately for confirmed or suspected acetylcholinesterase inhibitor agent exposure
5. Administer oxygen as appropriate with a target of achieving 94–98% saturation and provide airway management
6. Establish intravenous access (if possible)
7. Apply a cardiac monitor (if available)
8. The heart rate may be normal, bradycardic, or tachycardic

Toxins and Environmental

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