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Atropen (Atropine)

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Mild to moderate pain may be experienced at the site of injection.

The major and most common side effects of atropine can be attributed to its antimuscarinic action. These include dryness of the mouth, blurred vision, photophobia, confusion, headache, dizziness, tachycardia, palpitations, flushing, urinary hesitance or retention, constipation, abdominal distention, nausea, vomiting, loss of libido and impotency. Anhidrosis may produce heat intolerance and impairment of temperature regulation especially in a hot environment. Larger or toxic doses may produce such central effects as restlessness, tremor, fatigue, locomotor difficulties, delirium, followed by hallucinations, depression and ultimately, medullary paralysis and death. Large doses can also lead to circulatory collapse. In such cases, blood pressure declines and death due to respiratory failure may ensue following paralysis and coma. Hypersensitivity reactions will occasionally occur with atropine: these are usually seen as skin rashes, on occasion progressing to exfoliation. Adverse events seen in pediatrics are similar to those that occur in adult patients although central nervous system complaints are often seen earlier and at lower doses.

When atropine and pralidoxime are used together, the signs of atropinization may occur earlier than might be expected than when atropine is used alone. This is especially true if the total dose of atropine has been large and the administration of pralidoxime has been delayed. Excitement and manic behavior immediately following recovery of consciousness have been reported in several cases. However, similar behavior has occurred in cases of organophosphate poisoning that were not treated with pralidoxime.

Amitai et el (JAMA 1990) evaluated the safety of AtroPen® (atropine) 0.5 mg, 1 mg and 2 mg in a case series of 240 children who received AtroPen® (atropine) inappropriately (i.e., no nerve agent exposure) during the 1990 Gulf War Period. Overall, severity of atropinization followed a nonlinear correlation with dose. Estimated doses up to 0.045 mg/kg produced no signs of atropinization. Estimated doses between 0.045 mg/kg to 0.175 mg/kg and even greater than 0.175 mg/kg were associated with mild and severe effects respectively. Actual dosage received by children may have been considerably lower than estimated since incomplete injection in many cases was suspected. Regardless, adverse events reported were generally mild and self-limited. Few children required hospitalization. Adverse reactions reported were dilated pupils (43%), tachycardia (39%), dry membranes (35%), flushed skin (20%), temperature 37.8° C or 100° F (4%) and neurologic abnormalities (5%). There was also local pain and swelling. In 91 children with ECGs, no abnormalities were noted other than sinus tachycardia; 22 children had severe tachycardia of 160-190 bpm. Neurologic abnormalities consisted of irritability, agitation, confusion, lethargy, and ataxia.

The following adverse reactions were reported in published literature for atropine in both adults and children:

Sinus tachycardia, supraventricular tachycardia, junctional tachycardia, ventricular tachycardia, bradycardia, palpitations, ventricular arrhythmia, ***Cardiovascular:*** ventricular flutter, ventricular fibrillation, atrial arrhythmia, atrial fibrillation, atrial ectopic beats, ventricular premature contractions, bigeminal beats, trigeminal beats, nodal extrasystole, ventricular extrasystole, supraventricular extrasystole, asystole, cardiac syncope, prolongation of sinus node recovery time, cardiac dilation, left ventricular failure, myocardial infarction, intermittent nodal rhythm (no P wave), prolonged P wave, shortened PR segment, R on T phenomenon, shortened RT duration, widening and flattening of QRS complex, prolonged QT interval, flattening of T wave, repolarization abnormalities, altered ST-T waves, retrograde conduction, transient AV dissociation, increased blood pressure, decreased blood pressure, labile blood pressure, weak or impalpable peripheral pulses.

Mydriasis, blurred vision, pupils poorly reactive to light, photophobia, decreased contrast sensitivity, decreased visual acuity, decreased accommodation, ***Eye:*** cycloplegia, strabismus, heterophoria, cyclophoria, acute angle closure glaucoma, conjunctivitis, keratoconjunctivitis sicca, blindness, tearing, dry eyes/dry conjunctiva, irritated eyes, crusting of eyelid, blepharitis.

Nausea, abdominal pain, paralytic ileus, decreased bowel sounds, distended abdomen, vomiting, delayed gastric emptying, decreased food ***Gastrointestinal:*** absorption, dysphagia.

Hyperpyrexia, lethargy, somnolence, chest pain, excessive thirst, weakness, syncope, insomnia, tongue chewing, dehydration, feeling hot, injection site ***General:*** reaction.

Anaphylactic reaction.***Immunologic:***

Leukocytosis, hyponatremia, elevated BUN, elevated hemoglobin, elevated erythrocytes, low hemoglobin, hypoglycemia, hyperglycemia, ***Special Investigations:*** hypokalemia, increase in photic stimulation on EEG, signs of drowsiness on EEG, runs of alpha waves on EEG, alpha waves (EEG) blocked upon opening eyes.

Failure to feed. ***Metabolic:***

Ataxia, hallucinations (visual or aural), seizures (generally tonic clonic), abnormal movements, coma, confusion, stupor, dizziness, ***Central Nervous System:*** amnesia, headache, diminished tendon reflexes, hyperreflexia, muscle twitching, opisthotnos, Babinski's reflex/Chaddock's reflex, hypertonia, dysmetria, muscle

clonus, sensation of intoxication, difficulty concentrating, vertigo, dysarthria.

Agitation, restlessness, delirium, paranoia, anxiety, mental disorders, mania, withdrawn behavior, behavior changes. ***Psychiatric:***

Difficulty in micturation, urine urgency distended urinary bladder, urine retention, bed-wetting.***Genitourinary:***

Tachypnea, slow respirations, shallow respirations, breathing difficulty, labored respirations, inspiratory stridor, laryngitis, laryngospasm, pulmonary ***Pulmonary:*** edema, respiratory failure, subcostal recession.

Dry mucous membranes, dry warm skin, flushed skin, oral lesions, dermatitis, petechiae rash, macular rash papular rash, maculopapular rash, ***Dermatologic:*** scarlatiniform rash, erythematous rash, sweating/moist skin, cold skin, cyanosed skin, salivation.

Drug Abuse And Dependence

Atropine possesses no known potential for dependence.