

## Drugs Causing Delirium (anticholinergic / toxic metabolites)

### Deliriants (drugs causing delirium)

#### Prescription drugs

- Central acting agents
  - Sedative hypnotics (e.g., benzodiazepines)
  - Anticonvulsants (e.g., barbiturates)
  - Antiparkinsonian agents (e.g., benztropine, trihexyphenidyl)
- Analgesics
  - Narcotics (NB. meperidine\*)
  - Non-steroidal anti-inflammatory drugs\*
- Antihistamines (first generation, e.g., hydroxyzine)
- Gastrointestinal agents
  - Antispasmodics
  - H2-blockers\*
- Antinauseants
  - Scopolamine
  - Dimenhydrinate
- Antibiotics
  - Fluoroquinolones\*
- Psychotropic medications
  - Tricyclic antidepressants
  - Lithium\*
- Cardiac medications
  - Antiarrhythmics
  - Digitalis\*
  - Antihypertensives (b-blockers, methyldopa)
- Miscellaneous
  - Skeletal muscle relaxants
  - Steroids

#### Over the counter medications and complementary/alternative medications

- Antihistamines (NB. first generation)
  - diphenhydramine, chlorpheniramine).
- Antinauseants
  - dimenhydrinate, scopolamine
- Liquid medications containing alcohol
- Mandrake
- Henbane
- Jimson weed
- Atropa belladonna extract

\* Requires adjustment in renal impairment.

From: K Alagiakrishnan, C A Wiens. (2004). An approach to drug induced delirium in the elderly. Postgrad Med J, 80, 388–393. (Box 1, pg 389)

<b>Some commonly used medications with moderate to high anticholinergic properties and alternative suggestions</b>	
<b>Type of medication</b>	<b>Alternatives with less delirogenic risk</b>
Antidepressant (e.g., TCA, tertiary) Antihistamine (e.g., diphenhydramine) Antiparkinsonian (e.g., benztropine, trihexyphenidyl)  Gastrointestinal agents, e.g., (A) Cimetidine, ranitidine (B) Dimenhydrinate Antispasmodic (e.g., oxybutynin) Low potency antipsychotic (e.g., chlorpromazine, thioridazine)	Trazodone, SSRI, TCA (secondary amine) Second generation antihistamine (e.g., loratadine) Levodopa  Proton pump inhibitor Domperidone Tolterodine Haloperidol, atypical antipsychotic
SSRI, selective serotonin reuptake inhibitor; TCA, tricyclic antidepressant.	

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<b>Symptoms of an anticholinergic drug reaction</b>	
<b>Physical Symptoms</b>	<b>Cognitive Symptoms</b>
<ul style="list-style-type: none"> <li>▪ Blurred vision</li> <li>▪ Hot, dry skin / dehydration</li> <li>▪ Dry mouth</li> <li>▪ Shortness of breath</li> <li>▪ Dilated pupils</li> <li>▪ Increased heart rate</li> <li>▪ Increased / decreased psychomotor activity</li> <li>▪ Anorexia</li> <li>▪ Urinary incontinence</li> <li>▪ Hyperpyrexia</li> </ul>	<ul style="list-style-type: none"> <li>▪ Confusion / clouding of consciousness</li> <li>▪ Memory impairment</li> <li>▪ Visual hallucinations</li> <li>▪ Sensory illusions</li> <li>▪ Disturbance in sleep-wake cycle</li> <li>▪ Disorientation, especially to time and place</li> <li>▪ Incoherent speech</li> <li>▪ Anxiety, agitation, excitement</li> </ul>