Tricyclic Antidepressants (TCAs)

Tricyclic antidepressants (TCAs) are a class of drugs indicated to treat individuals with depression, bipolar disorder, and fibromyalgia. Additional indications of TCAs include neuropathic pain, chronic insomnia, attention-deficit/hyperactivity disorder, and panic disorder. The TCA imipramine may be used as an adjunct in treating childhood nocturnal enuresis. Patients with obsessive compulsive disorder may benefit from the TCA clomipramine. Examples of TCAs include amitriptyline, desipramine, and nortriptyline. These medications work by inhibiting the reuptake of norepinephrine and serotonin. Side effects of TCAs include sedation, orthostatic hypotension, cardiotoxicity, and anticholinergic effects, such as constipation and blurred vision. Due to their side effects, TCAs have been largely replaced by safer and better tolerated alternatives. Since TCAs have a delayed onset of 2 weeks, inform the patient that the therapeutic effects are not immediate. To minimize cholinergic rebound effects, instruct the patient to taper off, if discontinuing TCA use.

PLAY PICMONIC

Mechanism of Action

Inhibits Reuptake of Norepinephrine and Serotonin
Inhibiting-chains on Re-uptake tube with North-epi-pen and Silver-tonic
By inhibiting the reuptake of norepinephrine and serotonin, TCAs intensify and prolong the effects of these neurotransmitters. Norepinephrine increases attention while serotonin elevates mood.

Indications

Depression
Depressed-emo
The TCAs are primarily indicated for the treatment of moderate to severe depression as these drugs can elevate mood, increase physical activity, improve mental alertness, normalize sleep patterns, improve appetite, and decrease morbid preoccupation.

Bipolar Disorder
Bi-polar-bear
TCAs are also helpful during depressive episodes of a patient with bipolar disorder, a condition characterized by alternating episodes of mania and depression. The use of TCAs in the treatment of bipolar disorder is done after initiating other therapies (refer to the Picmonics on "Bipolar Disorder Assessment" and "Bipolar Disorder Interventions").

Fibromyalgia
Fabio-mayo-algae
Amitriptyline is a TCA drug which can be used to treat fibromyalgia. This disease is described by chronic widespread pain and allodynia, or a heightened and painful response to pressure.

Side Effects

Sedation
Sedation-darts
The TCAs commonly cause sedation as a result of the blockade of histamine receptors in the CNS. Patients should be educated to avoid hazardous activities if notable sedation is present. Due to this side effect, TCAs may be used to treat insomnia.

Orthostatic Hypotension
Oar Hippo-BP
The TCAs block alpha1-adrenergic receptors, causing orthostatic hypotension, dizziness, and reflex tachycardia. Instruct the patient to move slowly while assuming an upright position. If dizziness or lightheadedness occurs, instruct the patient to sit or lie down. Imipramine is the most likely to cause orthostatic hypotension, while nortriptyline is the least likely.

Anticholinergic Effects

Ant-tie-cola

The TCAs cause anticholinergic effects by blocking muscarinic cholinergic receptors. Effects include constipation, urinary retention, dry mouth, photophobia, blurred vision, and tachycardia. Since nortriptyline and desipramine have less anticholinergic activity, these TCAs are preferred in older adult patients.

Cardiac Toxicity

Heart with Toxic-green-glow

Cardiac toxicity is the most serious adverse effect of TCAs. The medication causes tachycardia by directly blocking receptors of histamine, acetylcholine, and norepinephrine. The TCAs increase the risk of dysrhythmias by decreasing vagal influence on the heart and slowing cardiac conduction. Medication overdose may prolong heart rhythms and increase myocardial irritability.

Considerations

Delayed Effect

Delayed-sign

Although the medications block transmitter uptake within hours of dosing, TCAs may require 2 weeks or longer for therapeutic effects to occur. Patients should be educated not to expect immediate effects of the medication. Due to variable half-lives, TCAs are dosed individually for each patient and are not administered PRN.

Do Not Stop Abruptly

Can't Stop Cold-turkey

Patients taking a TCA should not abruptly stop their medication. They should be tapered off to minimize discontinuation syndromes and cholinergic rebound effects.