



Major Uses of Tricyclic Antidepressants and their Side Effects

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DESCRIPTION

Tricyclic and tetracyclic antidepressants, also called cyclic antidepressants, are among the earliest developed antidepressants. Although they are effective, they have generally been superseded by antidepressants with fewer side effects. In some cases, it relieves depression when other treatments fail.

Cyclic antidepressants are called tricyclic or tetracyclic, 3 (tri) or 4 (tetra), depending on the number of rings in their chemical structure. Tricyclic Antidepressants (TCAs) are a class of antidepressants that share a similar chemical structure and biological activity. Scientists believe that people with depression may have an imbalance in neurotransmitters, chemicals that nerves produce and use to communicate with other nerves. Tricyclic antidepressants increase levels of two neurotransmitters, norepinephrine and serotonin, and blocks the action of another neurotransmitter, acetylcholine. Scientists believe that tricyclic antidepressants reduce depression by restoring the balance of these neurotransmitters in the brain. The drug also causes sedation and blocks some of the effects of histamine. Older people taking antidepressants, especially those taking serotonin, can experience a severe drop in sodium levels known as hyponatremia. This can cause fluid to build up within the body's cells, which can be potentially dangerous. This happens because serotonin can block the effects of hormones that regulate sodium and fluid levels in the body. Older people are more vulnerable as they age because it becomes harder to regulate their fluid levels.

Many side effects may be related to TCA's anti muscarinic properties. Such side effects are relatively common and may include dry mouth, dry nose, blurred vision, decreased gastrointestinal motility or constipation, urinary retention, cognitive and/or memory impairment, and elevated body temperature. Other side effects include drowsiness, anxiety, sluggishness (apathy/anhedonia), confusion, agitation, dizziness, akathisia, hypersensitivity, appetite and weight changes, sweating,

muscle spasms, weakness, nausea and vomiting, hypothermia. Blood pressure, tachycardia, rarely, arrhythmia. Convulsions, hallucinations, delirium, and coma are also some of the toxic effects caused by overdose. Also, muscle breakdown is rarely reported with this class of drugs.

Resistance to these side effects of these drugs often develops as treatment continues. Side effects may also be less noticeable if treatment is started at a low dose and then increased gradually, but this may also delay beneficial effects. TCAs can theoretically stop ventricular fibrillation, decrease cardiac contractility, and increase collateral blood flow to the ischemic myocardium, thus acting like classical antiarrhythmic drugs.

When taken in excess, it is cardio toxic, prolonging the heart rhythm and increasing myocardial hypersensitivity. New research also provides compelling evidence for a link between long-term use of anticholinergic drugs such as TCAs and dementia. Many studies have examined this association, but anticholinergic-related dementia may not reverse long-term, even years after drug use is stopped. This is the first study using the approach (over 7 years). Anticholinergic drugs block the action of acetylcholine, which carries messages in the nervous system. In the brain, acetylcholine is involved in learning and memory.

People may respond differently to the same antidepressant. For example, certain drugs may not be as effective for some people as others, or may have more or fewer side effects from taking certain antidepressants than others.

Genetics may play a role in how antidepressants affects people. In some cases, the results of certain blood tests can give clues about the body's response to certain antidepressants. However, variables other than genetics may affect response to medication. When choosing an antidepressant, doctors will consider patients symptoms, health problems, other medications intake, and what has worked for patient in the past.

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