

Chemistry and applications of catapres



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Catapres is the brand name for clonidine hydrochloride. Clonidine hydrochloride is a 40-year-old sedative and antihypertensive drug. It was created in the 1960s and was originally established as a nasal decongestant. Clonidine was later used in the U. S to treat hypertension (Encyclopedia). The drug acts as a centrally acting-agent, alpha-agonist, and a hypotensive agent and is most commonly used to treat high blood pressure or hypertension. However, it also treats attention hyperactivity disorder in children, the management of tics found with Tourette's syndrome, and therapy for diminishing cancer-related pain. Additionally, clonidine has multiple off-label uses that include the management of withdrawal symptoms from opioids, benzodiazepines, and alcohol. It can also treat anxiety, insomnia, and post-traumatic stress disorder. Furthermore, as a result of the sympathetic effect the drug has it. More specifically, the reduction of epinephrine in circulation it has been used to control hot flashes in menopause and restless leg syndrome (Yasaei and Saadabadi.).

The drug's inactive ingredients are comprised of colloidal silicon dioxide, corn starch, dibasic calcium phosphate, glycerin, lactose and magnesium stearate (RxList). When a patient is first prescribed to take catapres the lowest dose of . 05 to . 01 is usually given. The dose is soon progressively amplified until a successful quantity is discovered. Catapres tablets come in . 1,. 2, and . 3 milligrams. Clonidine is also available in patches that last numerous days (Sinfield).

Moreover, Catapres is a drug that is most effective in lowering high blood pressure levels. Clonidine does this by stimulating alpha adrenoreceptors in the brain stem. This results in the sympathetic outflow from the central

nervous system and a decrease in peripheral resistance, renal vascular resistance, heart rate, and blood pressure (Boehringer Ingelheim). It also decreases levels of certain chemicals in your blood and relaxes blood vessels so blood can flow more easily. Catapres is most commonly used to treat a condition called hypertension or high blood pressure which assists in preventing other ailments such as strokes, heart attacks, and kidney problems (Durbin). Catapres tablets are typically fast acting. A patient's blood pressure will start to decline 30-60 minutes after consuming oral tablets.

However, Catapres also many side effects. The most frequent side effects include dry mouth, drowsiness, constipation, dizziness and sedation. Additional side effects include fatigue, fever, headache, weakness, withdrawal syndrome and an increased sensitivity to alcohol. Some patients have even reported cardiovascular, central nervous system, dermatological, gastrointestinal, genitourinary, hematologic, metabolic, and musculoskeletal effects (RxList). The cardiovascular and nervous system effects reported include congestive heart failure, electrocardiographic abnormalities, palpitations, anxiety, delirium, insomnia, depression, and restlessness. The dermatological and gastrointestinal effects included alopecia, hives, rash, abdominal pain, salivary gland pain, and vomiting. The genitourinary, hematological, and metabolic effects were reported as decreased sexual activity, loss of libido, erectile dysfunction, low platelet count, and weight gain. The musculoskeletal and ophthalmological effects were leg and muscle pain, blurred vision, and dryness and burning of the eyes. It is important to

note that these side effects were less common and in many instances these patients had not yet established a relationship with the medication (RxList).

There are also many warnings associated with this medication. It is advised that patients do not discontinue therapy without consulting their physician. This is because sudden termination of the consumption of this treatment has resulted in symptoms such as headaches, agitation, and tremors that was followed by a rapid rise in blood pressure. This reaction is much greater after the administration of higher doses or the persistence of affiliated beta-blocker treatment. In rare instances there have been reports of hypertensive encephalopathy, cerebrovascular accidents and death have occurred after clonidine withdrawal. However, in cases of the excessive rise in blood pressure following the termination of the drug can be reversed by administering oral clonidine hydrochloride or by intravenous phentolamine (RxList). Additionally, patients that engage in activities such as operating machinery or driving should be advised of the sedative effect the drug. Moreover, the sedative effect may be increased with the use of alcohol or other sedative drugs (Yasaei and Saadabadi.).

While Clonidine or Catapres was originally designed to treat high blood pressure. The calming effect the drug has on the body it also helps treat people with ADHD symptoms such as hyperactivity, impulsivity, hostility, over-arousal, and sleep difficulties. In 2010, the FDA approved Kapvay, an extended version of clonidine that is used to treat children with ADHD. The benefits of using clonidine to treat ADHD and other disorders are that it can enhance the effects of stimulants when taken in addition with stimulant medication. Another benefit is that clonidine also has no appetite effect. This

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is a benefit because most stimulants typically lessen the patient's appetite which serves as a major issue for patients who are underweight. Clonidine also reduced anxiety. Since most sufferers of ADHD often experience symptoms of anxiety as well. Patients are usually prescribed other medications such as Xanax or Valium. However, these drugs can be addictive and effect cognitive functions like attention. For these reasons clonidine is a better option (Sinfield).

Clonidine also has many disadvantages associated with the drug as well. One of these are that it even though the FDS approved its usage for treating ADHD. Clonidine has been proven to be less proficient than stimulants. Stimulant medications have been proven to be more effective in treating this condition. Clonidine also may cause a brain fog. Many patients report experiencing a reduced ability to focus. However, for many people this effect is temporary until their body adjusts to the medication. Clonidine also only helps with hyperactivity, impulsivity, hostility, over stimulation, and sleep difficulties. It does not help with inattentive symptoms. Lastly, there is little available research on how it works in adults with ADHD. Many studies have shown that clonidine is effective in helping relive symptoms of ADHD in children and youth but, it is uncertain how effective it is in adults. It is theorized that this is the result of the fact that clonidine helps relieve the symptoms of hostility, hyperactivity, and impulsivity that often decrease in adulthood (Sinfield).

Clonidine may also be used to relieve some of the pain associated with certain cancers. Patients with neuropathic or nerve pain which is an intense chronic pain often described as sharp stinging or burning may be treated

with clonidine (Jacques). Many studies also suggest that clonidine can be effective in preventing and managing chronic pain. In 1988, it was reported that the use of 150 mcg of epidural clonidine for back pain, arachnoiditis, and surgical scar pain was as effective as 5 mg of morphine with a longer duration. Furthermore, additional studies discovered in a study by Carroll that clonidine provided significantly greater anesthetic effects than epidural clonidine. However, both of these medications were associated with major side effects (Anil Kumar). While it is clear that clonidine offers significant benefits in relieving pain additional studies need to be done to show just how effective clonidine can be to these patients.

Clonidine has proven to be very effective in helping patients with hypertension, ADHD, and the management of tics in Tourette's syndrome. It offers many benefits to these individuals. However, it must be taken with caution because the drug also has many side effects and can sometimes be fatal. The elderly is especially at risk to these side effects. The drug also has the potential to be addictive so many precautions must be taken when taking clonidine.

References

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