Diazepam (Valium)

Diazepam (Valium) is a long-acting benzodiazepine, which is a classification of medications that are used to help with insomnia, muscle spasms, and anxiety. In emergency situations, they can be used in patients with seizures and alcohol withdrawal. Benzodiazepine acts on gamma-aminobutyric acid (GABA) in the brain. By increasing the effects of GABA, the central nervous system becomes depressed.



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Indications

Anxiety

Anxiety-bag

Diazepam (Valium) contributes to central nervous system depression via an increase in the inhibitory effect of GABA, resulting in the patient feeling relaxed and demonstrating its utility in treating anxiety.

Seizures and Status Epilepticus

Caesar with Statue Caesar

Diazepam (Valium) is indicated to treat generalized seizure disorder as well as status epilepticus, which is defined as a prolonged seizure lasting more than 5 minutes or multiple seizures occurring consecutively without complete recovery of consciousness. Seizures lasting greater than 30 minutes place the patient at significant risk for severe consequences like neuronal injury, neuronal death, or other long-term alterations to the neuronal network. Diazepam is often administered IV or via rectal suppository for acute treatment.

Muscle Spasms

Muscle-man Spaceship

Diazepam's (Valium) binding to benzodiazepine receptors on postsynaptic GABA neurons in the CNS causes increased chloride permeability of neuronal membranes which results in their being hyperpolarized. As such, these neurons are more stabilized and less excitable, demonstrating CNS depression and alleviating neuronal overactivity related to muscle spasms.

Alcohol Withdrawal

Alcoholic-martini making a Withdrawal

Diazepam (Valium) is indicated in the management alcohol withdrawal symptoms by helping stabilize vital signs, reduce anxiety, prevent delirium and possible seizure activity that could occur during withdrawals.

Side Effect/Assessment

Dizziness/Vision Changes

Dizzy-eye and Delta Eye

By facilitating the inhibitory effect of GABA activity in the brain, diazepam (Valium) induces a slowed CNS which can contribute to developing dizziness and blurred vision as side effects.

Confusion/Amnesia

Confucius with Memory-eraser

Two particularly significant sites affected by diazepam (Valium) are the hippocampus and cerebral cortex. By acting on these areas, confusion and amnesia can occur. It is important to note that at higher doses, diazepam may cause sufficient sedation to result in patients becoming stuporous.

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Urinary Incontinence

Urine In-continents

In some patients, urinary incontinence may occur while taking diazepam (Valium). This may be a result of its muscular relaxant effect discussed earlier and/or diminished awareness about the need to urinate.

Behavioral Changes

Delta Behavior

Some individuals may experience a paradoxical effect when taking diazepam (Valium). While reactions vary, these patients may experience agitation, loss of impulse control and/or aggression.

Respiratory Depression

Deflated Lungs

As a CNS depressant, diazepam (Valium) administration may also result in respiratory depression, the effects of which are amplified when used in combination with other CNS depressants (alcohol, opioids, etc.). Monitor patient's breathing pattern and oxygen saturation when high doses or multiple doses are being administered.

Antidote

Flumazenil (Romazicon)

Flute-mace-nail

Flumazenil (Romazicon) is the reversal agent for benzodiazepines like diazepam (Valium). Prompt administration is imperative in cases of overdose or vital sign destabilization.

Nursing Considerations

Fall Precaution

Falling Precaution-sign

Creating a “safe” exit from the bed is important to eliminate potential falls. Educate the patient on the potential for falls and how to prevent falls while on this medication. Assist the patient to the bathroom when needed.

Do Not Stop Abruptly

Can't stop Cold-turkey

Patients that use benzodiazepines like diazepam (Valium) at home should not abruptly stop their medication. They should be tapered off to prevent any withdrawal symptoms. Signs of withdrawal syndrome include altered mental status, anxiety, tachycardia, and vomiting.

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