



DRUGS: If Their Names Sound The Same Do They Do The Same Thing?

A Bruno Byte

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Let's talk about Valium-like drugs and GABA. Neurons in the brain and spinal cord produce a chemical called GABA. GABA is the chief inhibitory or "sedative/calm you down" neurochemical. To relax you, GABA is released by a neuron, floats across the gap between one neuron and several others and plugs into a GABA receptor on the neurons, like a key in lock. However there are at least 19 different GABA receptors! So when you plug the GABA key into the its receptor locks, GABA can have a powerful effect, a mild effect, cause you to be sleepy or calm or, if the receptors are on your motor neurons, stop muscle spasm.

The drugs designed to plug into GABA receptors are the *benzodiazepines*, of which Valium is the grandfather. Our research has shown that Valium (diazepam) is the best medication for treating spasms in large muscles, especially in the back and neck. We found that Klonopin (clonazepam) is best at treating spasms of the esophagus that prevent food from going down; Valium doesn't relax the esophagus and Klonopin doesn't relax back muscles. Finally Xanax (alprazolam) is effective in turning off spinal cord motor neurons that cause your legs to twitch and jump during sleep, where neither Valium nor Klonopin is effective; however Xanax does not stop back muscle spasms or relax the esophagus.

There are a number of other oral benzodiazepines that have different effects such as decreasing anxiety, e.g., clorazepate (Tranxene), chlordiazepoxide (Librium), lorazepam (Ativan), and promoting sleep, e.g., temazepam (Restoril) and triazolam (Halcion).

Bottom line: There are different "key" drugs for different GABA receptors that cause different effects in the body. You can't just substitute one Valium-like drug for another and expect it to have the same effect. Without even considering interactions with other medications that you may be taking, the dose of the benzodiazepine you take or how quickly your liver gets rid of the drug, just the 19 GABA receptors and the drugs we mentioned above can have 10,888,869 trillion, trillion different effects!

So, use the benzodiazepine that works for to treat your symptom. To paraphrase an old car commercial, "Accept no substitute!"

The Encyclopedia of Polio and Post-Polio Sequelae

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