



# TIZANIDINE MEDICATION APPEARS TO REDUCE ABNORMAL EXCESSIVE MUSCLE TONE

## *Spasticity Research Abstract*

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**The Question:** Does orally-delivered tizanidine medication reduce abnormal excessive muscle tone (“spasticity”) caused by injury to the brain?

**Past Studies** demonstrate that the medication tizanidine hydrochloride (Zanaflex) is effective for reducing spasticity for persons with spinal cord syndromes and multiple sclerosis. “Spasticity” is a term used to describe a condition that causes muscles to be stiff and resist stretch. As a result of injury to the brain, those muscles that become spastic are unable to “relax” or “stretch out.” Because of this, persons with spasticity may not be able to straighten out or bend their arm or leg joints, even if they have the strength to do the task. For instance, the muscles necessary to straighten the arm may actually be working, but if the muscles that bend the arm are spastic, they can be so powerful that individuals cannot overcome the force generated by the spastic muscles and are unable to strengthen their arms. When spasticity limits a person’s body movements, it can decrease functional abilities and also can lead to medical problems such as pain, sleep disturbances, and skin conditions. Spasticity can be treated for some people. Many spasticity medications have been tested over the years.

Oral dose anti-spasticity medications tend to disperse throughout the body and, because of this, are appropriate for treating overall body spasticity, rather than spasticity that is located in one place. Oral dose anti-spasticity medication use among persons with traumatic brain injury has been limited because of potential negative side effects than can affect recovery and cognition (thought processing or thinking skills).

Tizanidine can be taken in an oral dose and is fairly affordable. Other spasticity treatment medications can require surgery or repeated injections. Although other medications for treating spasticity experienced by persons with brain injuries have been evaluated, the safety and efficacy of oral Tizanidine had not been studied.

**This Study** is the first of its kind using Tizanidine (Zanaflex) to treat spasticity in the arms and legs of persons with traumatic brain injuries and stroke. Tizanidine is one of several anti-spasticity medications, is relatively affordable, and can be taken easily in an

oral dose. The researchers found that Tizanidine appeared to be effective for decreasing spasticity; however, dosing was limited by the side effect of drowsiness. Overall, they found that Tizanidine appeared to have fewer side effects than other anti-spasticity medications and was effective in treating spasticity as a result of brain injury.

**Who May Be Affected By These Findings:** Persons with brain injury and upper and lower limb spasticity, their families and caregivers, health care providers, and researchers.

**Caveats:** There was a 41% incidence for the side effect of drowsiness. More research is needed to determine whether long-term administration would result in a reduction of side effects or beneficial effects. The side effects were related to the dosage of the medication and were quickly reversed with a reduction in the dosage amount. The use of Tizanidine in the first few weeks after acquired brain injury has not been established. Some reports indicate that use of this medication type early after acquired brain injury may actually impair recovery.

**Bottom Line:** In this study, tizanidine appeared to be effective in decreasing spasticity associated with traumatic brain injury and stroke. More research is needed to determine dosage to minimize side effects and long-term risks, long-term benefits, and appropriate accompanying therapeutic interventions.

**Find This Study:** Meythaler, J. M.; Guin-Renfroe, S.; Johnson, A.; & Brunner, R. M. (2001). Prospective Assessment of Tizanidine for Spasticity due to acquired brain injury. *Archives of Physical Medicine Rehabilitation*, (82), 1155-1162.