

# The GeriJournal



Volume 9, Number 5

May 2014

*A publication of GeriatRx Pharmacy*

## **Midazolam for Tonic Clonic Seizures**

We used to use diazepam i.m. to stop tonic-clonic seizures. The injection was painful and the absorption poor. As a result, lorazepam 4mg i.v. injection became the treatment of choice. The i.m. route was also acceptable. Absorption was better than with diazepam, but it was still relatively slow. Delayed response can lead to prolonged seizures and increases the possibility of permanent damage to the brain. For this reason and because lorazepam injection requires refrigeration (plus secure storage), an alternative with better characteristics was sought.

Midazolam (Versed®) seemed like a good bet. It does not require refrigeration and is absorbed faster than any other benzodiazepine when given i.m. It had been used to treat seizures, but without the support of a formal study, it was unclear whether or not it was a good alternative. Such a study was carried out in 17 U.S. cities between 2009 and 2011. Paramedics responding to emergency calls treated

tonic-clonic seizures with either 10mg of midazolam i.m. or 4mg of i.v. lorazepam. Each patient also received either placebo midazolam (i.m.) or lorazepam (i.v.) at the same time as receiving active drug.

Remarkably, i.m. midazolam stopped 73% of the seizures, compared to only 63% with i.v. lorazepam. Time to resolution was faster with midazolam, because i.v. administration was challenging and difficult to initiate. As well, fewer of the midazolam treated patients required hospitalization. Many of the patients treated were elderly. Based on the results of this randomized, double blind study (RAMPART), it would appear that midazolam is a better choice than lorazepam for emergency seizure treatment in our facilities.

## **Warfarin – A New Antipsychotic?**

Warfarin may be losing its grip on the anticoagulant market, but it could still have a future in another line of work – as an antipsychotic!

This interesting revelation comes to us from an anticoagulation clinic in Rio de Janeiro, Brazil. The university clinic was monitoring 350 long-term warfarin users, five of whom happened to be schizophrenics. Surprisingly, all five of these

patients achieved psychiatric remission and no longer required psychotropic drugs.

The search for a possible mechanism for this effect led researchers to tissue plasminogen activator (tPA). tPA is used as a clot buster in emergency treatment of stroke, pulmonary embolism and myocardial infarction. It also seems to play a role in nerve cell growth and development in areas of the brain impacted by schizophrenia. Perhaps after more research is done, warfarin will be poised to return to its past glory and beyond.

## **Vit C and Brain Bleeds**

Results of an interesting study were released at the recent meeting of the American Academy of Neurology. Sixty-five healthy controls were compared to 65 patients who had experienced an intracerebral hemorrhage (ICH).

Subjects in the ICH group were more likely to have low or deficient vitamin C levels. Other risk factors for ICH included hypertension, alcohol consumption and obesity. Vitamin C's positive effects on cell membranes and collagen may have been responsible for its apparent beneficial effect. If fruit and vegetable consumption is poor, low dose vitamin C supplementation may be worth considering.