



Last May 2011, a 3 day Neural Prolotherapy Workshop was held in Los Angeles led by Dr. John Lyftogt. The Science of Neural Prolotherapy and Neurogenic Inflammation is now clear. How can severe chronic pain be relieved immediately with injections under the skin of 5% dextrose, the same fluid contained in ordinary Intravenous solution?

Dr. Lyftogt expounded on the science of Neurogenic Inflammation and emphasized the Concept of Nociceptors and the role of TRPV1, the molecule responsible for neurogenic inflammation and pain. Dextrose is now postulated to be a TRPV1 antagonist, relieving neurogenic inflammation and reversing pain.

The main role of the unmyelinated C fiber nerve cells with TRPV expression is to make sure

every cell is functioning optimally. In normal physiological circumstances, these nociceptor is silent and does not produce pain. When part of the body is injured, the role of these nerve cells is to kick start the repair mechanism and to help bring back normal function to the injured body part. They do this by activating their TRPV1 receptor, which transmits sodium and calcium influx and releases two neuropeptides. The first peptide released is called substance P, as in pain. It signals the brain that there is pain and limits you from moving, thus allow healing of scar formation. CGRP also causes cells to become engorged with calcium, which may lead to calcium deposits in chronically inflamed areas. A blow, a burn, or a cut, are not the only ways the body can be injured. If the fascia is suddenly stretched out of shape, these holes where these nerve crosses thru fascia or muscles. They are no longer able to conduct nerve impulses or even repair themselves. Inside the nerve, the injured, swollen C fibers now have activated TRPV1 receptors, which will remain activated as long as the C fibers are swollen.

If the TRPV1 receptors remain activated, there is persistent neurogenic inflammation and interruption of axonal flow. This in turn does not allow nerve growth factors and other neural ingredients for healing to reach the injured nerve. There is subsequent degeneration of tissues, as tissues do not heal. This may help explain why people who suffer whiplash injuries have such persistent pain. Blocking the TRPV1 receptor is the best way to block the release of substance P and CGRP, and the transmission of pain signals by the C fibers. Sugar (dextrose) has been shown to block the TRPV1 receptor almost instantly. Once the TRPV1 receptor is blocked, CGRP and substance P stop being produced and the painful message which substance P transmits to the brain disappears in a few seconds. The nerve is no longer swollen and easily crosses the small opening in the fascia. It regains its normal function, which is to maintain cell health. It is no longer a source of pain. This is the most exciting development in chronic pain management in over 50 years. That a simple dextrose in sterile water solution can relieve pain instantly and completely?

Because of low side effect and safety of D5W, Dr. Howard Rosen and I experimented on other applications using 5% dextrose with sterile water to relieve pain syndromes and other conditions. These applications include 1. The Sweet Caudal Epidural and 2. Prologel. We introduced our early findings of these applications during this workshop.

The Sweet Caudal Epidural. Because unmyelinated C fibers are also found at the nerve root/spinal level, and the nerve root can also suffer with compression injury, Dr. Howard Rosen and I experimented on injecting D5W into the spinal canal via caudal epidural approach to see if it would relieve low back pain. We found that it does in fact, produce relief of low back and leg pains instantly and completely! Amazingly, it also helps to relieve pain in patients with nonspecific low back pain and ones with peripheral polyneuropathy. Dr. Howard Rosen and I, along with Dr. Dean Reeves, are currently conducting a prospective multicentered study on Sweet Caudal epidural cases and seeing the long-term outcomes of this amazing discovery. A Prologel transdermal dextrose application for penetration into the subcutaneous tissues without a needle has been introduced by Dr. Howard Rosen, with promising results for treatment of Neuropathic pain. This application continues to evolve.

Also, Vitamin D cream, a steroid hormone that has neuroprotective effects, has consistently relieved many peripheral painful syndromes in my personal experience.

Neural prolotherapy and the science of neurogenic inflammation is the paradigm shift that is changing the world of pain. I think this is the most exciting development in pain management in the last 50 years. I think we are sitting in a movement that is just beginning and it continues to evolve daily. I hope that you will join in the search for answers and better outcomes for our patients.