RESEARCH

Spinal Cord Injury Clinical Research Report

by Orpha Schryvers

I believe a short explanation is needed, before reading about the following research projects. In clinical research, basic researchers work towards understanding the spinal cord and investigating ways of curing an injury to the spinal cord. Clinical researchers investigate new treatments for the various complications that result from an injury to the spinal cord.

Four of the clinical research projects previously completed at the Rehabilitation Hospital are described below and involve treatments that were not available prior to the studies, one for the prevention of bone density loss and three for the treatment of severe spasticity.

Pamidronate Study: Osteoporosis (a decrease in the density of bone) is a complication of SCI which results in increased risk for leg and hip fractures. Several drugs have been studied in search of one that will prevent the development of osteoporosis following SCI. Pamidronate (Aredia) is one such drug which was studied here between 1995-1999. The drug was given intravenously once monthly for 6 months following SCI.

The results of the study showed that pamidronate did prevent the development of osteoporosis as long as the person was getting the drug. However, after the 6 month treatment period, the bone density then decreased but not quite as much as if no pamidronate had been given. Because pamidronate can only be given intravenously, the search is still on for a drug that can be taken orally that will prevent bone density loss. It would appear that the drug would need to be taken indefinitely. Please refer to footnote 1 at the bottom of the page.

Tizanidine Studies: Tizanidine (Zanaflex) is a drug used for the treatment of spasticity related to SCI. Two trials were done here, one involved people with SCI in 1993 and the other involved people with MS in 1995. Winnipeg was just one site among many in Canada and the United States. The results showed that tizanidine is a safe drug and is effective in reducing spasticity in people with SCI and MS.

The importance of these two studies is that they resulted in the availability of this treatment in Canada and in the United States. Please refer to footnotes 2 and 3 at the bottom of the page.

Intrathecal Baclofen Pump Study: This study introduced to Manitoba a treatment for severe spasticity of spinal origin, a treatment which had already been used in the United States for many years. It involved the surgical implanting of a drug pump under the skin in the lower abdomen. The pump is connected to the spinal canal by a catheter so the drug Baclofen (lioresal) is infused directly onto the spinal cord where spasticity originates. This treatment was found to be very effective in reducing spasticity in people with SCI or MS. Please refer to footnote 4 at the bottom of the page.

Please contact Orpha Schryvers, SCI Clinical Research Coordinator, at 787-2725 if you would like a copy of one or more of these articles.

[1] PW Nance, O Schryvers, W Leslie, S Ludwig, J Krahn, D Uebelhart. Intravenous Pamidronate Attenuates Bone Density Loss After Acute Spinal Cord Injury. **Archives of Physical Medicine and Rehabilitation** 80:243-251, 1999.

[2] PW Nance, J Bugaresti, K Shellenberger North American Tizanidine Study Group: Efficacy and Safety of Tizanidine in Treatment of Spasticity in Patients with Spinal Cord Injury. **Neurology**, 44(11-Suppl 9):S44-S52, 1994.

[3] PW Nance, WA Sheremata, SG Lynch, T Vollmer. S Hudson, GS Francis, P O'Conner JA Cohen, RT Schapiro, R Whitman, MK Mass, JW Lindsey, K Shellenberger. Relationship of the anti-spasticity effect of tizanidine to plasma concentration in patients with multiple sclerosis. **Archives of Neurology** 54:73 1 -6, 1997.

[4] PW Nance, OI Schryvers, BJ Schmidt, HI Dubo, B Loveridge, HD Fewer. Intrathecal baclofen therapy for adults with spinal spasticity: therapeutic efficacy and effect on hospital admissions. **Canadian Journal of Neurological Sciences**, 22:22-29, 1995.