



The Spinal Column

Summer 2007

July 2007



Summer is finally here! Outdoor fun. Vacations. Swimming. Boating. Fishing. Biking. Lots to do. No matter what your summer fun is...Remember to lather on that SPF 40, wear a hat, and drink plenty of fluids!



Inside this issue:

Dr. Nemunaitis, cont.	2
SCI Annual Forum	2
Calendar of upcoming events	3
Research opportunities	4
Dr. Nemunaitis, cont.	4
Passing of a friend	5
Chapter SCI numbers	5

CardioVascular Complications of Spinal Cord Injury by Dr. G. Nemunaitis: Part II

In the last issue, Dr. Nemunaitis was addressing the complication of Hypotension.

Conservative Management:

- ◆ Compression stockings
- ◆ Ace wraps
- ◆ Proamitine
- ◆ Tilt table
- ◆ Easy Stand

For treatment of Dependent Edema:

- Leg elevation above the heart
- Compression stockings
- Diuretics may be an issue
- Diet, warm temperatures, menstrual cycle and length of time legs are down will make a difference in terms of promoting edema.

Medication management:

- * Salt tablets (NaCL 1-2 g tid/qid) as the first medication
- * Pseudoephedrine (Actifed and PseudoFed): 30-60 mg by mouth q4-6h: not to exceed 240mg in 24h: avoid at night: may cause anxiety and insomnia
- * Fludrocortisone (Florinef): 0.05-0.2 mg by mouth daily: typical initial dose 0.1mg qam
- * Midodrine (ProAmitine): 2.5-10mg by mouth three times a day while patient awake and upright at intervals

of at least 3 hours; allow >3 hrs. between last dose and night time dose

- * Desmopressin (DDAVP)
- * Erythropoietin
- * Octreotide

Bradycardia

This is due to an imbalance in the autonomic nervous system during spinal shock. Bradycardia in cervical tetraplegia is seen virtually 100% of the time and cardiac arrest in 15% (Lehman 87). Parasympathetic input to the heart from the vagus nerve remains intact and may be unopposed and can result in bradycardia. The higher the level of injury the greater the risk. Reflex bradycardia and, less frequently, cardiac arrest have been noted in acute SCI. It is often precipitated by tracheal stimulation usually during suctioning and hypoxia. Chronically reflex bradycardia can be triggered by over stimulation of the sympathetic nervous system during autonomic dysreflexia.

Management:

- ◇ Monitor heart rate and blood pressure, if indicated, provide support with medications (eg, dopamine) that increase heart rate and blood pressure. Studies support keeping a mean arterial pressure (MAP) of at least 85 mm Hg to maintain spinal-cord perfusion and help prevent secondary ischemia.
- ◇ Cardiac arrest and hypokalemia can result from hypersensitivity of muscle-cell membrane if a patient with SCI is given succinylcholine. Use of this drug should be avoided in patients with SCI.
- ◇ Keep atropine and a transcutaneous pacemaker at patient's bedside (cont. pg 2)

(Dr. Nemunaitis, cont. from page 1)

Bedside for emergencies. If prolonged or excessive bradycardia occurs, insert the transvenous pacer: however, permanent pacing is rarely necessary.

- ◇ *Atropine Sulfate: 0.5mg-1mg IV; may repeat to maximum 2 mg. Total*
- ◇ *Bradycardia usually resolves 2-6 weeks after the SCI.*
- ◇ *Before performing any procedure that increases vagal tone (suctioning), correct hypoxia with the administration of 100% oxygen and premedicate with atropine. Full lung expansion before suctioning may decrease vagal tone; therefore, provide a full breath with a ventilator or bag-valve-mask resuscitator (Ambu-bag).*
- ◇ *Clinically relevant sinus bradycardia with nodal or ventricular ectopic beats or even asystole may follow succinylcholine administration without evidence of hyperkalemia. Interaction of succinylcholine with postsynaptic muscarinic acetylcholine receptors at postganglionic sympathetic terminals have been suggested as a contributing mechanism. Children appear to be prone to these side effects but asystole after a second dose of succinylcholine has occurred in adults as well.*

Autonomic Dysreflexia

Autonomic Dysreflexia: This is a disorder of autonomic homeostasis as a result of a disconnection of the brain

and spinal cord. The central control of the sympathetic response is disconnected. The loss of supraspinal control and the hyperreflexic sympathetic nervous system activity secondary to noxious stimuli below the level of injury (in individuals with SCI at T6 levels or above-above the major SNS splanchnic outflow) can lead to autonomic dysreflexia and dangerously high blood pressures. If AD is left untreated, seizure and stroke may result.

Symptoms:

- ⇒ *Pounding Headache*
- ⇒ *Flushed skin and sweating above level of injury*
- ⇒ *Blurring vision*
- ⇒ *Nasal stuffiness*
- ⇒ *Goose bumps*
- ⇒ *Nausea*
- ⇒ *Elevated Blood Pressure*

Causes:

- * *Full bladder or bowel*
- * *Infection*
- * *Constipation*
- * *Skin Ulcers*

cont. page 4

SPINAL CORD ANNUAL FORUM



The Annual Spinal Cord Injury Forum is right around the corner Aug. 3rd.. The theme for this year is Mardi Gras. A terrific jazz band has been hired to provide the entertainment.

Spinal Cord Injured in the war in Iraq, Mark Mix, will be the keynote speaker. The Akron Battalion Naval Sea Cadets will provide an Honor Guard on his behalf. Don't miss it!

Dr. Nemunaitis will again share his expertise in the segment, "Ask the Doc" which was very popular last year.

Dancing Wheels will return with new routines for us to enjoy.

If you know any vendors who would like to be in-

involved as a sponsor, please let Jacquie Stanton know at 216-778-3174.

Kathy Murany and her family are busy working on completing the decorations. Every year, Kathy exudes creative expertise in decorating for the forum and enjoyment of the attendees.


If you would like to donate any items for the raffle, contact Karen Hooven.

This year's recipient of the Spinal Cord Community Achievement award is our own Kevin Sullivan!

Congratulations, Kevin!

*We would like to thank Edgepark for joining the vendor provider list! They are also sponsoring the next Chapter meeting on July 16th, at 7 p.m.

July 2007

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3 7pm AA	4 	5	6	7
8	9	10 7pm AA	11	12	13	14
15	16 7pm Chapter meeting	17 7pm AA	18	19	20	21
22	23	24 7pm AA	25	26	27	28
29	30	31 7pm AA				

MARK YOUR CALENDARS NOW FOR THE EVENTS NOTED! EVERY MONTH, WE WILL TRY AND KEEP EVENTS CURRENT. SUBMIT ANY EVENTS, MEETINGS, ETC. TO THE EDITOR ASAP!

July 7, 2007: Captain's game outing

July 16, 2007: EdgePark Surgical Distributors are hosting the meeting.

August 3, 2007: Spinal Cord Injury Forum.

August 18, 2007: Poker Run

*Refer to the Schedule of Events emailed out earlier for more dates and times of events.

ARE YOU INTERESTED IN RESEARCH? How about being a participant? See Below...

How would you like to participate in a research study which could impact the treatment and care of all Spinal Cord Injured persons? It's easy. Go to the websites below:

www.ninds.nih.gov and ClinicalTrials.gov

There are FIVE research projects on this website that you could take part in, in the State of Ohio. Some of these studies may have concluded. It was hard to tell from the information on the website. I would encourage you to call and find out if you could still participate.

1. Study of an Implantable Functional Neuromuscular Stimulation System for Patients with SCI

You have to be 18yrs or older. The Protocol for the study can be found on the website. This study is being conducted by Dr. Ron Triolo Case Western Reserve (216) 778-787 and Dr. John Davis at MetroHealth Medical Center (216) 778-3456.

2. A 15-Week Trial to Assess Pregabalin for the Treatment of Nerve Pain due to SCI.

Contact Pfizer at 1-800-718-1021.

3. Electrical Activation of the Diaphragm for Ventilatory Assist.

The principal investigator is Dr. Onders at University Hospital Case Medical Center. Contact Mary Jo Elmo, NP, for more information at (216) 844-8594.

4. Effects Of GW679769 on Bladder Nerve Function and Symptoms of Overactive Bladder in SCI.

Contact Firouz Daneshgari at 877-379-3718

5. Oxandrolone to Heal Pressure Ulcers.

Contact Dr. Chester Ho at the Cleveland VAMC at (216) 791-3800 ext 5520. This study is current! Go to the website to read the eligible criteria for this study.

Cont. from page 2: Dr. Nemunaitis: Autonomic Dysreflexia

Traumatic pain (broken bones or cuts) below level of injury, tight clothing, tests & procedures (cysto, GYN), ingrown toe nails, or any painful stimulus below level of injury.

Management

- * Sit patient up. Counteract rise in BP with orthostatic hypotension.
- * Eliminate the cause! Look for noxious stimuli below level of injury. Ex: catheterize, check for impaction, change position to relieve pressure.
- * Treat elevated systolic blood pressure (>150)
- * Medications: Apply Nitroglycerine Paste 1-2 inches to skin every 2 hours. May wipe off if BP stable. Reapply if needed. OR administer Nifedipine 10mg capsule (immediate release form). May repeat in 20-30 minutes if necessary. Avoid sublingual which can cause abrupt hypotension.
- * IV Antihypertensives are secondary agents to be utilized in a monitored setting.
- * Treat symptomatic hypotension by laying down the individual and elevating the legs.
- * Anesthetize noxious stimuli prior to removal to prevent exacerbation of AD.
- * Monitor symptoms and BP for at least 2 hours after the resolution of an AD episode.
- * Admit the patient if response to treatment is poor or cause has not been identified. AD can lead to seizures, stroke, or death.

Next month....Tachyarrhythmia....

NATIONAL ASSOCIATION OF HOME BUILDERS/ [HTTP://WWW.NAHB.ORG](http://WWW.NAHB.ORG)

Go to this website. Information on Accessibility Requirements for Fair Housing, Concrete Homes: Built in Safety, International Residential Code-2000, Common Cod Problems...and How to Fix Them, NAHB's Model Green Home Building Guidelines are just a few of the topics offered. NAHB plays an active role in developing residential accessibility standards and in advancing housing accessibility. The Residential Fire Sprinkler Action Kit provides information needed in opposing mandatory fire sprinkler requirements for one-and two-family dwellings in the IRC. Check out the Residential Fire Sprinkler

THE NORTH EAST OHIO CHAPTER OF THE NATIONAL SPINAL CORD INJURY ASSOC.

MetroHealth Rehabilitation Institute of Ohio (MRIO)
2500 MetroHealth Dr.
Cleveland, Ohio 44109-1998
Main phone: 216-778-7800
*The Northeast Ohio Spinal Cord Injury Association is a 501 (C)(3)
Tax exempt, Non-Profit Association*

THANKS TO OUR MEETING SPONSORS for their generous donation of information and refreshments!! Yum

Editor: Karen Hooven 216-778-3776
Fax: 216-778-1120 *note new numbers
Email: khooven@metrohealth.org



Do you have any items for sale? Let the editor know and your items will be included in the newsletter.

The NorthEast Ohio Chapter of the Spinal Cord Injury Association is a non-profit organization aimed to support and empower those persons with a spinal cord or associated injury.

Chapter meetings are held once a month on the third Monday of each month. The meetings are held at MetroHealth Medical Center 7th Floor Activities Room.

Parking is free and wheelchair accessible. Food is provided by donating vendors and companies at no cost to participants.

A Chapter newsletter is published several times during the year. Any member of the chapter is welcome to submit ads, articles, or other newsworthy items to the editor. Please do so at least one week prior to the meeting. Items for sale are welcome.

PARALYSIS RESOURCE GUIDE from the Christopher and Dana Reeve Paralysis Research Center is available at **NO COST** call toll free 1-800-539-7309 or email info@paralysis.org or internet site www.paralysis.org 9am-5pm Eastern time.

Tragically, we lost a valued member of the Spinal Cord Community, and a friend. Dave Lytle has been a member of the Spinal Cord Chapter and Chapter Officer since the beginning. Dave passed away in June, 2007. We offer our deepest condolences to Dave's family and friends. More information will be forthcoming in case you would like to make a donation in his name.

7A SCI Cord Injury Unit: 216-778-3805

Dr. Greg Nemunaitis, Director, Spinal Cord Injury Unit: 216-778-5514

Dr. Melvin Mejia, new attending for the Spinal Cord Injury Unit: 216-778-3805

Denise Forster-Paulson RN NP 216-778-3804

Outpatient Therapy Services: 216-778-4414

Wheelchair Clinic: 216-778-5514

United Spinal Assoc: www.unitedspinal.org

National Spinal Cord Assoc: www.spinalcord.org

ADA: www.ada.gov

Chapter Officers:

Adam Sweeney (President): asweeney@leapinfo.org

Kendra Bohland (Secretary): sweet-cope@hotmail.com

Jeff Shieman (Treasurer): jjscpajd@aol.com