Understanding Neuropathy

June 8, 2105
Nancy Herlin, MHA & Guest panel
What Will Be Covered Today?

- Review definition, symptoms, causes,
- Review diagnosis and treatment options
- Questions & answers
Definition — what is the Nervous System?

Nervous System
• Central
• Peripheral
Definition — what is Peripheral Neuropathy?

**Neuro**=nerve

“**pathy**”=sickness
Symptoms – Do I have Neuropathy?

Where
• Feet, legs
• Hands, arms
• Internal organs

What
• Numbness
• Weakness, imbalance or foot drop
• Pain
  – Burning or Tingling
  – Ants crawling
  – Extreme sensitivity
• Digestive or bladder problems, sweating problems
Types of Peripheral Nerves

**Motor nerves** — from spinal cord to muscles

**Sensory nerves** — from sensory organelle to spinal cord
- Small fiber
- Large fiber

**Autonomic nerves** — control blood pressure, sweating, bladder function, heart rate, digestion, etc.
Diagram of a nerve
Symptoms – Why are mine different than yours?

**SYMPTOM**
- Weakness
- Cramping and muscle twitch
- Muscle or bone loss
- Loss of ankle reflexes, foot drop
- Changes in skin, hair, and nails

**Motor Neuropathy**
Symptoms – Why are mine different than yours?

SYMPTOM

• Impaired sense of:
  – Vibration
  – Light touch discrimination
  – Limb position, balance problems

Sensory Neuropathy:
  – Damage to large, myelinated nerves
Symptoms — Why are mine different than yours?

SYMPTOM
• Impaired sense of temperature
• Pain – loss of pain or hyper sensitive

Sensory Neuropathy:
  – Damage to small, myelinated nerves
Symptoms — Why are mine different than yours?

SYMPTOM

- Digestive problems – constipation, diarrhea, difficulty eating
- Dizziness, lightheadedness due to BP
- Bladder dysfunction
- Reduced or inability to sweat, heat intolerance
- Dry eyes or mouth
- Difficulty breathing or heart problems

Autonomic Neuropathy
Causes — How did I get this?

• Diabetes and Impaired Glucose Tolerance — **33%**
  
  – > 50% of individuals with diabetes will have mild to severe forms of neuropathy
  
  – Severity is related to how long nerves are exposed to hyperglycemia
Causes - continued

• Other Causes—33%

• Auto-Immune Disease/Inflammation
• Inherited disorders (Charcot-Marie Tooth)
• Metabolic disease (kidney or liver)
• Infections - HIV, Lyme disease, shingles
• Toxins – heavy metals, chemicals
Causes - continued

• Other Causes (cont.) – 33%
  • Medications for chemotherapy
  • Vitamin deficiency (B-12, D, Thiamine, E)
  • Underactive thyroid gland
  • Trauma or pressure on nerves
  • Tumor

• Idiopathic – 33%
Is Neuropathy a Big Problem?

• 1 of every 15!!! 20 million people in U.S.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Prevalence in U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Sclerosis</td>
<td>250,000-350,000</td>
</tr>
<tr>
<td>Parkinson’s Disease</td>
<td>1 million</td>
</tr>
<tr>
<td>Alzheimer’s Disease</td>
<td>5.2 million</td>
</tr>
<tr>
<td>Breast Cancer</td>
<td>2.5 million</td>
</tr>
<tr>
<td>Neuropathy</td>
<td>20 million</td>
</tr>
<tr>
<td>Diabetes</td>
<td>23.6 million</td>
</tr>
</tbody>
</table>

• 122,000 in Central Texas alone
Is Neuropathy a Big Problem?

**Effects of Neuropathy**

- Limits our ability to function
- Limits independence
- Promotes **falls** and slow wound healing
- Causes **problems with sleep**
- Can lead to **depression**
What can I do?!??!
Proper Diagnosis is Key

- History and physical exam
- EMG/Nerve Conduction Study
- Lab tests: CBC, liver, kidney, electrolytes, ESR, thyroid, inflammatory markers, protein study, Vit D, B12, 2 hr. diabetes test
- Nerve and muscle biopsy
- MRI
- Lumbar puncture (spinal tap)
Treatments

• Try to find the cause of neuropathy and reverse it with treatment

• Treat symptoms

• Seek information & support
Treatments to Remove Cause

<table>
<thead>
<tr>
<th>Cause</th>
<th>Treatment</th>
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</thead>
<tbody>
<tr>
<td><strong>Infections</strong></td>
<td></td>
</tr>
<tr>
<td>– Leprosy, Syphilis, Lyme Disease</td>
<td>– Antibiotics</td>
</tr>
<tr>
<td>– HIV, Herpes Zoster (Shingles)</td>
<td>– Antivirals</td>
</tr>
<tr>
<td><strong>Toxins</strong></td>
<td></td>
</tr>
<tr>
<td>– Alcohol</td>
<td>– Remove exposure</td>
</tr>
<tr>
<td>– Chemotherapy</td>
<td></td>
</tr>
<tr>
<td>– Arsenic &amp; heavy metals</td>
<td></td>
</tr>
<tr>
<td>– B6 &gt; 200 mg/day</td>
<td></td>
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</tbody>
</table>
## Treatments to Remove Cause

<table>
<thead>
<tr>
<th>Cause</th>
<th>Treatment</th>
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</thead>
<tbody>
<tr>
<td><strong>Vitamin Deficiencies</strong></td>
<td>Treat deficient state with oral or injectable supplements</td>
</tr>
<tr>
<td>– B-12, Thiamin, Vitamin D</td>
<td></td>
</tr>
<tr>
<td>– Vitamin E</td>
<td></td>
</tr>
<tr>
<td><strong>Metabolic dysfunctions</strong></td>
<td>Address kidney, liver or other diseases</td>
</tr>
<tr>
<td>Cause</td>
<td>Treatment</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Diabetes</td>
<td>• Control glucose and improve circulation</td>
</tr>
<tr>
<td></td>
<td>• Healthy Diet</td>
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<tr>
<td></td>
<td>• Exercise- Swimming, Elliptical, stationary bike</td>
</tr>
<tr>
<td></td>
<td>• Treat other Risk Factors</td>
</tr>
<tr>
<td></td>
<td>• Smoking and high lipids</td>
</tr>
<tr>
<td></td>
<td>• Alcohol: eliminate</td>
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<tr>
<td></td>
<td>• Get the Right shoes and supports and check your feet for injury</td>
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</tbody>
</table>
# Treatments for Symptom Relief

<table>
<thead>
<tr>
<th>Cause</th>
<th>Treatment</th>
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</thead>
<tbody>
<tr>
<td><strong>Immune System</strong></td>
<td></td>
</tr>
<tr>
<td>- Guillain Barre, Chronic</td>
<td>- IVIG (Immunoglobulin), Plasmapheresis</td>
</tr>
<tr>
<td>Inflammatory Demyelinating</td>
<td></td>
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<tr>
<td>Polyneuropathy</td>
<td>- Steroids, immunosuppressants</td>
</tr>
<tr>
<td>- Sjogren’s Syndrome</td>
<td></td>
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<tr>
<td>- Monoclonal Gammopathy</td>
<td></td>
</tr>
<tr>
<td>(MGUS)</td>
<td></td>
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<tr>
<td><strong>Hereditary</strong></td>
<td></td>
</tr>
<tr>
<td>- Charcot-Marie Tooth (CMT)</td>
<td>- Supportive Care</td>
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<tr>
<td></td>
<td>- Corrective Surgery</td>
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</table>
Pain Treatments for Symptom Relief

• **Medications**
  • Anti-seizure medications - *Gabapentin/Neurontin, Lyrica, Topamax*
  • Antidepressants and SNRI’s - *Nortriptyline, Amitriptyline, Cymbalta, Effexor*
  • Topical agents - lidocaine patch, creams, capsaicin
  • Opiates
  • NSAIDs – ibuprofen, Aleve, aspirin
Pain Treatments for Symptom Relief

• **Other Pain Treatments**
  
  • Nerve Block
  • Spinal Cord Stimulator or TENS unit
  • Corrective surgery
  • Neuroablation
Other Treatments for Symptom Relief

• Diet and Supplements
  • Healthy Diet – anti-inflammatory, food sensitivities & allergies, avoid alcohol
  • Supplements
    • B-vitamins (both B-complex and B-12).
    • Alpha-Lipoic Acid
    • Metanx – a nutritional supplement FDA approved for diabetic neuropathy.
    • Neuro-V – supplement
    • Fish Oils
    • Acetyl-L-Carnitine
Other Treatments

• Exercise
  – Aerobic conditioning – swim, elliptical, bike
  – Progressive strengthening exercises – weights
  – Physical and Occupational Therapy
Other Treatments

• **Exercise**
  - Balance/coordination
  - Progressive flexibility/stretching exercises – Tai Chi, Yoga
Other Treatments

• Complementary & Alternative Medicine
  • Massage Therapy
  • Acupuncture
  • Meditation

• Supportive Care
  • Good Shoes
  • Assisted Walking Devices – orthotics, foot braces, canes, walkers
Other Treatments

• Understand where you are in your journey with Neuropathy

Four Phase Model

- Crisis
- Stabilization
- Resolution
- Integration
Four Phase Model

• **Crisis**
  • Deal with immediate hurts & traumas of your new illness
  • Learn to allow your suffering

• **Stabilization**
  • Stabilize and restructure your life patterns and perceptions
  • Learn to regard your suffering with compassion
Four Phase Model

• Resolution
  • Develop meaning and a new, authentic self
  • Learn to meet your suffering with respect

• Integration
  • Continue to find ways to express your new “personal best” and reintegrate or form new supportive networks of family and friends
  • Learn to integrate your suffering into a whole life.
Seek Information & Support

Websites:
Neuropathy Alliance of Texas  [www.neuropathyalliancetx.org](http://www.neuropathyalliancetx.org)
Foundation for Peripheral Neuropathy [www.foundationforpn.org](http://www.foundationforpn.org)

Support Groups in Central TX:
2\textsuperscript{nd} Saturday 10:30-12 pm Austin-West  Bee Cave Rd/Barton Creek
4\textsuperscript{th} Monday 1:30-3 pm Austin Northwest Hills  Hart Lane
2\textsuperscript{nd} Monday 1:00-2:30 pm Georgetown Williams Dr.

Books: You Can Cope with Peripheral Neuropathy: 365 Tips by Mims Cushing & Norman Latov, MD
Peripheral Neuropathy: When the Numbness, Weakness and Pain Won’t Stop by Norman Latov, MD
Coping with Peripheral Neuropathy by Scott Berman, MD