Overview of Peripheral Neuropathy

What is this?
And what can I do about it?
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Peripheral Neuropathy

Peripheral vs. Central

Neuro = nerve

‘pathy’ = sickness
Types of peripheral nerves

- **Motor nerves** – from spinal cord to muscle
- **Sensory nerves** – from sensory organelle to spinal cord
  - Small fiber (pain, temperature)
  - Large fiber (vibration, position, balance)
- **Autonomic nerves** – control blood pressure, sweating, bladder function, heart rate, gut, etc. All the things you don’t have to think about
Symptoms
(how can I be numb and hurt at the same time?)

- Weakness
- Pain
- Burning
- Thick soles
- Walking on stones
- Tingling
- Imbalance
Distribution of numbness or weakness in peripheral neuropathy

- Peripheral nerve: carpal tunnel syndrome
- Nerve root: C6 radiculopathy

- Polymyopathy: mild
- Moderate
- Severe
Causes of Neuropathy

- Inflammatory (blood vessels or myelin)
- Hereditary (Charcot Marie Tooth)
- Metabolic (diabetes, liver, kidney)
- Toxic (alcohol, chemical exposure)
- Vitamin deficiency (B12, D, Thiamine...)
- Drug related (chemo drugs)
- Related to tumor (paraneoplastic)
Most common neuropathies

- Diabetic
  - Distal sensory motor, painful
  - Autonomic
  - Proximal amyotrophym (usually legs)
- Vasculitic
- Cranial nerve
Most common neuropathies

- Hereditary – CMT type 1, CMT type 2
- B12 deficiency
- Hypothyroid
- Chronic inflammatory demyelinating polyneuropathy (CIDP)
- Acute inflammatory demyelinating neuropathy (Guillian Barre syndrome)
- Related to rheumatological diseases
- Toxic – EtOH abuse
Diagnosis

- History and physical exam
  - Weakness? Proximal or distal?
  - Sensory loss? Small fiber or large fiber
- EMG/NCS
- Lab tests: CBC, liver, kidney, electrolytes, ESR, thyroid, inflammatory markers, protein study, Vit D, B12, 2 hour diabetes test
Chronic Inflammatory Demyelinating Neuropathy (CIDP)

- Proximal and distal weakness and numbness
- Usually responds to steroids or IVIG
- Diagnosed by EMG/NCS
- ICE study
- Advice: calendar with dates, dose and drug maker
Peripheral Nerve
Myelinated vs. demyelinated
Chemo Neuropathies

- Most common with cisplatin, taxanes, ara-C, ifosfamide
- Initial symptoms are numbness, paresthesias and pain in feet
- Drug withdrawal, if possible, usually reverses symptoms- hard decision
- Symptoms may continue to progress for weeks to months (coasting), then plateau and fade (hopefully)
Neuropathy mimics

- Restless Leg Syndrome (RLS)
- Erthyromelalgia
- Entrapment neuropathies (carpal tunnel, ulnar neuropathy, tarsal tunnel syndrome)
Treatment

- Try to find cause of neuropathy and reverse it
- Treat symptoms
Treatment of symptoms

- Tricyclic antidepressants and SNRI’s
  - Nortriptyline, Amitriptyline, Cymbalta, Effexor
- Anti-seizure medications
  - Gabapentin, Lyrica, Topamax, ..... 
- Topical agents-lidocaine patch, creams, capsacin
- Narcotics
- NSAID’s
Treatment of Symptoms

- Alpha lipoic acid (?)
- Stuff:
  - Good shoes
  - Practice balance
  - Rub feet
  - Watch weight
Vitamins

- If you are B12 deficient taking B12 helps
- No proof that vitamins in general help/or hurt neuropathy except
- B6 (pyridoxime) can cause neuropathy, don’t take more than 200mg per day
- Vitamin D is getting some press recently, doesn’t hurt to take more
Questions?