Highs and Lows:
A Tale of Supine Hypertension and Orthostatic Hypotension

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INTRODUCTION:

In medicine we are often faced with clinical conundrums. Medical management of supine hypertension and orthostatic hypotension is an example of such a conundrum, as treatment of one often worsens the other.

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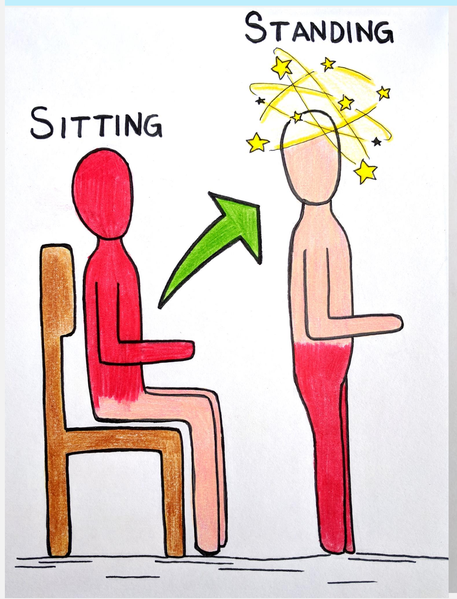

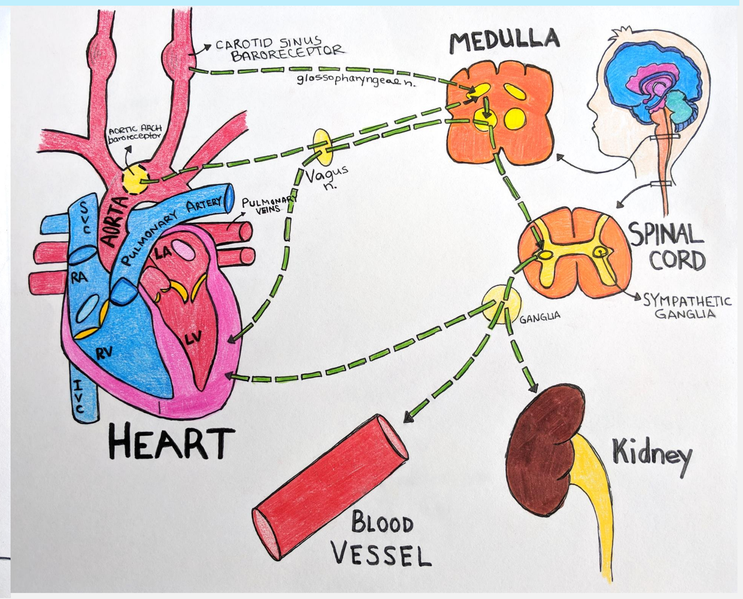

DIFFERENTIAL FOR NEUROGENIC ORTHOSTASIS

Disorder	Autonomic Symptoms	Motor Symptoms	Other Features
Multiple-System Atrophy	Severe autonomic dysfunction Develops early (may be the first symptoms)	Parkinsonism features (80%) Cerebellar symptoms (20%) Corticospinal tract dysfunction	Dysarthria Stridor Dystonia REM sleep behavior disorder Dementia
Parkinson's Disease	Occur late in the disease process May be worsened by treatment of motor symptoms Usually mild to moderate	Parkinsonism	REM sleep behavior disorder Dementia late in the course
Lewy-Body Dementia	Autonomic dysfunction occurs early in clinical course	Parkinsonism	Progressive dementia (often prior to motor features) Fluctuating cognitive dysfunction Visual Hallucinations REM sleep behavior disorder
Pure Autonomic Failure	Gradual progressive dysautonomia Prognosis better then the above disorders	None	None

Reference: adapted from Freeman, R. Neurogenic Orthostatic Hypotension. NEJM. 2008; 358: 615-624.

TAKE HOME POINTS:

- ❑ **IT'S NOT ABOUT THE NUMBERS! What is your patients functional goal? What do they value?**
- ❑ **USE SHORT ACTING AGENTS! Allows different treatment strategies at different points during the day.**
- ❑ **REQUIRES PATIENT BUY IN! Otherwise it's likely to fail.**

CASE PRESENTATION:

An elderly man with prolonged history of orthostasis, difficult to manage HTN, CAD, CKD and prior history of TIA presented with progressive orthostasis symptoms, severe weakness, dizziness and recurrent syncopal episodes. He was found to have NEUROGENIC ORTHOSTASIS evidenced by severe supine hypertension (systolic >200) and severe orthostatic hypotension and otherwise unremarkable work up.

Treatment Trials:

1. **Supportive care alone:**
   - Hydration
   - Compression stockings
   - Medication list reviewed for concerning agents that may cause hypotension
   - Head of bed elevation while supine
   - Physical therapy
2. **Single agent strategies:**
   - Low dose beta blockade to slow heart rate increase ventricular filling time, did not improve his symptoms.
   - Nitroglycerine cream at bedtime, worsened headache
3. **Short Acting Strategy**
   - Short acting antihypertensives while supine, Captopril and Clonidine at bedtime
   - Blood pressure augmentation during the day with Midodrine

Outcome:

- Experienced clinical improvement with combination of supportive and short acting strategy
- Discharged to Skilled Nursing facility then eventually back home independently

DISCUSSION:

Supportive Therapies[2]

- Ensuring adequate hydration
- Compression Stockings or Abdominal Binders
- Removal of offending agents
- Elevation of head of bed during sleep
- Physical Therapy and Occupational Therapy

Medications

Use short acting antihypertensives for supine periods

- Nitroglycerine and Hydralazine[3]
- Short acting Ace Inhibitors and Clonidine[4,5,6]

Use of Blood Pressure Augmentation Agents

- Midodrine, Fludrocortisone, Pyridostigmine[4,5,6]

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