

CHRONIC EFFECTS OF STROKE

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INTRODUCTION

- Why is this topic important?
- What are some of the chronic effects of stroke?
- How do we treat them?

WHY ARE WE TALKING ABOUT CHRONIC STROKE?

- Approximately one person has a stroke every 40 seconds.
 - Nearly one quarter of these strokes are recurrent.
- An estimated seven million American adults are living with a stroke.
- Lifetime stroke risk is one in five for women and one in six for men among those 55 to 75 years of age.
- Stroke remains a leading cause of long-term disability in the United States.

WHAT ARE SOME ACUTE EFFECTS OF STROKE?

- Spastic hemiplegia
- Aphasia
- Gait abnormality
- Impaired cognition
- Vision loss
- Dysphagia
- Deep vein thrombosis
- Pressure sores
- Neurogenic bladder
- Depression
- Loss of muscle mass
- Dependence on others
- Chronic pain
- Hemineglect



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WORLD HEALTH ORGANIZATION DEFINITIONS

- Impairment: A problem in body function or structure.
 - Most of the acute issues that we just named.
- Activity limitation: A difficulty encountered by an individual in executing a task or action.
 - At 6 months after stroke, 40% of stroke survivors have difficulties with basic self care tasks.
- Participation restriction: A problem experienced by an individual in involvement in life situations.
 - More than 30% of stroke survivors report participation restrictions even at 4 years after stroke.

WORLD HEALTH ORGANIZATION

- **Disability:** A complex phenomenon, reflecting the interaction between features of a person's body and features of the society in which he or she lives. Disability is the interaction between individuals with a health condition (e.g. stroke) and personal and environmental factors (e.g. negative attitudes, inaccessible transportation and public buildings, and limited social supports).

IMPAIRMENTS

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ACTIVITY LIMITATIONS

- Walking
- Communicating
- Paying bills
- Cutting food
- Toileting
- Feeding
- Dressing
- Thinking
- Transferring
- Picking up grandchildren
- Ballroom dancing
- Swinging a golf club
- Driving
- Playing piano
- Playing bridge



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PARTICIPATION RESTRICTIONS

- Social role
 - Community reintegration
- Familial role
 - Redefine familial roles
- Vocational role
 - Can they go back to work?
 - In the same capacity?
- Engagement
- Autonomy



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HEMIPARESIS



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HEMIPARESIS

- Treat with PT, OT
 - With MCA stroke, leg usually recovers before the arm
 - Proximal to distal recovery
- Electrical stimulation
 - Prevents atrophy
 - Facilitates use of muscles that are starting to activate

HEMIPARESIS

- Bracing for foot drop, knee hyperextension
 - Improves gait mechanics
 - Prevents falls
 - Prevent arthritis
- Bracing for wrist and shoulder
 - Usable position at the wrist
 - Prevent contracture at the wrist
 - Alleviate shoulder pain
- Medications
 - SSRIs have been shown to improve dependence, disability, neurological impairment, anxiety, and depression after stroke



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SPASTICITY

- What is spasticity?
- How do you treat it?



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SPASTICITY

“Spasticity is a motor disorder characterized by a velocity dependent increase in tonic stretch reflexes (“muscle tone”) with exaggerated tendon jerks, resulting from hyperexcitability of the stretch reflex, as one component of the upper motor neurone syndrome.”

Lance 1980



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SPASTICITY

- Not all spasticity is bad
 - Maintenance of muscle mass, especially over bony prominences – less skin breakdown
 - Reflexive bowel and bladder function
 - Decreased incidence of osteoporosis
 - Increased metabolic needs – less likely to gain weight.
 - Maybe increased function or decreased caregiver burden

SPASTICITY

- Goals
 - Measurable
 - Impairment → what clinicians measure well
 - Function → what matters more to patients
 - Patient (or caregiver)-centered
 - May not correspond to technical or clinical goals



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SPASTICITY

- Goals
 - Low level: passive function
 - Positioning, orthotic fit, compliance, decreased spasms, pain control, decrease caregiver burden, prevent contractures
 - High level: active function
 - Upper extremity: improve prehension, grasp, release, improved reaching and overhead activities, reduce shoulder pain with movement
 - ADL
 - Increase independence, decrease time to perform
 - Mobility
 - Speed, balance, quality, safety, prevent future complications
 - Others
 - Improve efficiency of exercise/stretching program



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SPASTICITY

- Treatments
 - Therapy
 - Stretching, casting, stretching, modalities, stretching, positioning
 - Oral medications
 - Baclofen, tizanidine, dantrolene, benzodiazepenes
 - Injectable medications
 - Botulinum toxins
 - Implantable options
 - Baclofen pump
 - Surgical treatments



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APHASIA



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APHASIA

- Speech therapy
- Augmentative communication devices
- Sometimes medications



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IMPAIRED COGNITION



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IMPAIRED COGNITION

- Speech therapy
- Compensatory techniques
- Medications
 - Amantadine
 - Ritalin (and other stimulants)
 - Aricept (and others)
 - Anti-depressants



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VISION LOSS



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VISION LOSS

- Ophthalmologic evaluation
- Occupational therapy
- Prisms
- Eye patch

FATIGUE



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FATIGUE

- Sleep training
- Consider sleep study
- Consider endocrine work up
- Treat mood disorders
- Medications
 - Amantadine
 - Ritalin (and others)
 - Anti-depressants
 - Vitamin D



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MOOD DISORDERS



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MOOD DISORDERS

- Ask
 - Mood, hobbies, activities, family, schedule
- Counselling
- Antidepressants
 - Especially SSRIs



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SECONDARY STROKE PREVENTION

- Blood pressure goal: less than 140/90 and sometimes less than 120/70
- Aspirin or Plavix
- If atrial fibrillation (a. fib) – consider warfarin or other anticoagulants
- Statin – decreases risk of primary and secondary stroke with or without elevated cholesterol
- Diabetes goal:A1C less than 7
- Lifestyle modifications: stop smoking, eliminate or reduce alcohol, moderate to vigorous physical exercise most days of the week for at least 40 minutes, weight reduction



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WHEN DO WE START THESE THINGS?

- Inpatient rehabilitation
 - Early if possible
- Skilled nursing/transitional care
 - Don't let them be lost to follow up
- Home

SUMMARY

- Acute effects of stroke become chronic effects of stroke.
- Treat impairments with goals that will affect quality of life now or in the future.
- Remember that disability is the interaction between a person and his/her environment.
- Ask about their family, hobbies, activities, etc.

RESOURCES

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