Objectives

- Introduction
  - Stroke Statistics
  - Acute to Chronic

- Review Complications
  - Post-acute stroke rehab focus
  - Emphasis on Prevention

- Conclusion
Introduction

Stroke Survivors...

- 10% recover almost completely
- 25% recover with minor impairments
- 15% die shortly after
Introduction

Stroke with Chronic Impairments:

- 40% moderate to severe impairments requiring special care
- 10% require nursing home or long-term care facility
Complications

- Recurrent or Worsening of Stroke
- Pneumonia
- DVT
- Pulmonary Embolus
- Cardiac and Respiratory Complications
- Seizures

- Death after stroke
Pneumonia

- Largely due to Aspiration

- Risk for aspiration:
  - Age > 65
  - Level of Disability
  - Dysphagia
  - Cognitive Impairments
  - Speech Impairments
Risk of Pneumonia:
- Decreased level of consciousness
- Severe facial palsy
- Mechanical ventilation
- Brainstem strokes
- Poor dentition
Prevention

- Identify At Risk Patients
- Swallow Evaluations
- Compensatory techniques
- Positioning
  - HOB elevated
  - Laying on side
- Adhere to Feeding Restrictions
- Secretion Management
- Early Mobilization
- Oral Hygiene
  - Tooth brushing may reduce risk in ventilated patients
DVT Prophylaxis

- Paretic limb is most at risk
  - Paralysis and immobility
- Subcutaneous heparin or LMWH
  - Ischemic strokes

- Sequential Compression Devices (SCDs)
- Early mobilization
Other Complications

- Urinary & Fecal Incontinence
- Musculoskeletal
  - Hemiplegic shoulder pain
  - Contractures
  - Complex regional pain syndrome
- Pain Syndromes
- Spasticity
- Osteopenia
- Hip fractures (7x the risk)
- Mood Lability
- Depression
Genitourinary

- UTI
  - 6-30%
  - Increased age, catheters, stroke severity, female

- Prevention:
  - Bladder program with timed voids
  - Intermittent Catherization
  - Treat if have clinical symptoms
Urinary Incontinence

- More likely to be institutionalized
- High occurrence of detrusor hyper-reflexia (uninhibited spastic bladder)
- Hyporeflexic bladder (Diabetics, etc)
- Skin Considerations
- Timed bladder emptying program
- Medication management
Up to 2/3 of the stroke population in first year

Long list of etiologies:
- Glenohumeral Subluxation
- Spasticity
- Adhesive capsulitis
- Rotator cuff tears
- Brachial plexus traction
- Impingement syndromes, bursitis
- CRPS
Prevention

- Positioning
- Passive ROM
- Electrical stimulation

- Early detection
- Slings
  - For ambulation if there is significant traction
  - Caution against prolonged use
Other Complications

- Urinary & Fecal Incontinence
- Musculoskeletal
  - Hemiplegic shoulder pain
  - Contractures
  - Complex regional pain syndrome
- Pain Syndromes
- Spasticity
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- Hip fractures
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Hip Fracture
- 7x the risk in the first year after a stroke
- Fall precautions/Minimizing Fall Risk
  - Therapy and supervision
  - Home evaluations and modifications
  - Avoiding Polypharmacy

Osteopenia
- Early Mobilization
- Medication Management
Mood

- Depression is Multifactorial
  - Premorbid History
  - Adjustment to Disability
  - Stroke Related
  - Communication limitations

- Mood Lability
- Impulsivity
- Fatigue
Mood

- Prevention?
  - Identify at Risk patients
    - Premorbid Psychiatric Conditions
    - Severity of Disability
    - Adjustment to stroke
  - Support groups, Neuropsychological evaluations, Family Support and education
Conclusion

- Stroke survivors are at risk for Multiple Complications involving each organ system.
- Some are more preventable than others.
- Early detection of at risk groups is needed.
- Monitoring and treating early is key.
- Early mobilization is essential.
- Education for patients and families.
- Support groups.
References

- www.strokeassociation.org
Questions

- Rehabilitation Panel ...

- Thank You!