Evaluation and Treatment of the Geriatric Patient with Neurological Impairments in the Acute Rehab Setting

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Objectives

To list the signs/symptoms of Miller-Fisher Syndrome (MFS)

To verbalize the importance of evidence-based practice and perform a thorough literature search.

To provide examples of various high-level interventions that may be performed on a geriatric patient.

To demonstrate the use of standardized tests in the clinic.

To elicit clinical decision making in regards to the use of assistive devices.
Patient M:

72 yo male transferred to UPMC Mercy on 3/18/15 with variant of Guillain-Barre Syndrome (GBS).

Chief Complaint: double vision in R eye, unsteady gait, LE weakness

Of note: pt reports a bad cold which resolved 3 days prior to onset of symptoms

HPI:
◦ Miller Fisher Variant of GBS

PMH:
◦ Astroglioma x 2 s/p resection (1990s)
◦ CAD s/p stent
◦ HTN
◦ HLD
◦ BPH
Physical Therapy Evaluation

Chief Complaint:
◦ “Double/Foggy Vision”

Cognition:
◦ Impaired safety awareness
◦ Impulsive

Pain:
◦ 8/10 R Forearm “Burning”

Physical Appearance:
◦ Well-nourished male
◦ Wide eyes
◦ R eye ptosis
◦ Forward head posture
◦ Thoracic kyphosis
Physical Therapy Evaluation

Home Set-Up:
◦ 2 story (split level) house with his wife

PLOF:
◦ Completely independent

Denies recent falls

R handed

Employment:
◦ Retired investor

Leisure Activities:
◦ Watching TV
◦ Reading
Physical Therapy Evaluation

ROM:
◦ WNL B UE / LE

Strength:
◦ Grossly 4/5 B UE / LE

Sensation:
◦ Intact bilaterally UEs and LEs

Balance:
◦ Seated balance: S EOB sit unsupported
◦ Standing balance: ModA for static stance x 30 seconds
◦ Berg Balance 15/56 (3/31/15)
Physical Therapy Evaluation:

Oculomotor Exam:
- Impaired convergence, divergence
- Impaired ROM / weakness (R>L)
- Saccadic movement impaired B
- Smooth pursuit impaired B

Coordination:
- Fine Motor - Finger to thumb; finger to nose – WNL
- Gross coordination – heel to shin – impaired bilaterally
Physical Therapy Evaluation:

Transfers:
- Sup<>Sit = Supervision
- Sit<>Stand = MinA

Ambulation:
- 25’ without AD ModAx1 HHA and w/c follow

Stair Negotiation:
- Deferred on eval 2’ safety concerns

Vital Signs:
- HR: 62
- BP: 156/70 mmHg
- Pulse Ox 99% on room air
Physical Therapy Evaluation:

Short Term Goals:

◦ Sup<>Sit Mod I

◦ Sit<>Stand with S

◦ Ambulate on Level Surfaces 100’ with LRD MinA for safe household ambulation

◦ Negotiate 4 stairs with B HR MinA
Physical Therapy Evaluation

Long Term Goals:
◦ Sup<>Sit I
◦ Sit<>Stand Mod I
◦ Ambulate on Level Surfaces >150’ with LRD Mod I for safety in the home and the community
◦ Negotiate 12 stairs with 1 HR Mod I for safe entry into the home and community navigation
◦ Negotiate curb step with LRD Mod I for safe community navigation
◦ Perform car transfer Mod I for safe discharge and transportation
What is Miller Fisher Syndrome?

Miller Fisher Syndrome (MFS) is a variant of Guillain-Barre syndrome (GBS) that is characterized by ophthalmoplegia, ataxia, and areflexia.
POC Based on Evidence

3 studies support the following:

- Continued PT is beneficial in GBS.
- High-intensity rehab programs reduce disability in GBS.
- Functional outcomes and Quality of life were improved by PT in those with GBS.

POC Based on Evidence

Don’t treat the disease
Treat the patient!
ICF Model

Health Condition

Miller Fisher Syndrome

Body Function & Structures
Dizziness, Double Vision, Weakness, Fatigue, Balance

Activity
Bed Mobility, Ambulation, Stairs

Participation
Driving, Reading, Watching TV

Environmental Factors
Wife, Children, 2 Story Home, Wheeled Walker

Personal Factors
Coping skills, Compliant with HEP, Motivated to return to Independence
April 2nd 2015 (4 Days Later):

**Double vision:**
- Still present at objects of > 1 ft. distances

**Transfers:**
- Sit<>Stand MinA

**Ambulation:**
- 150’x2 MinA, HHA without w/c follow
- Carpet 25’x4 MinA, HHA without LOB

**Stair Negotiation:**
- 4 with B HR MinA step-to gait pattern
- Curb step ModA with HHA
Interventions:

**Ther Ex:**
- NuStep
- Sit<>stand without use of UEs
- Mini Squats

**Balance:**
- Static stance
- Ball rotations laterally
- Standing ball toss
- 4” step taps
- Side-stepping
- Ambulation with head turns
- Obstacle course
Evidence to Support Balance Interventions:

“Exercise programs significantly improve balance and mobility in patients with balance problems, independent of strategy.” (Steadman, et al)

“Our intervention can improve functional performance and protect against falls and fall-related injuries.” (Means, et al)

“Progressive resistance training and progressive functional training are safe and effective methods of increasing strength and functional performance.” (Hauer, et al)
Interventions:

Non-Supported Gait Training:
◦ 80’x1 S->ModA able to self-correct LOB ~25% of the time

Vestibular:
◦ Horizontal and Vertical Saccades
◦ Horizontal and Vertical Smooth Pursuit
◦ Until Fatigue with frequent rest breaks
Non-Supported Gait Training:

What is it?

“Non-supported gait training uses error-driven learning, high challenge, and high-repetition task practice to train walking skills without the use of equipment.”

(Perry, et al. 2014)
Non-Supported Gait Training:

How do you implement NSGT?

◦ The patient takes 1 or 2 steps without external support
◦ EXTREMELY close supervision
◦ Allow loss of balance
◦ Only take a few steps at a time
◦ Continue with reciprocal gait pattern as able
◦ Minimal verbal instruction (Perry, et al. 2014)
Literature to Support NSGT:

● Task-specific practice

● Increased time spent in therapy

● Limiting variability through physical constraints of robotic assistive devices for walking may reduce error signals to the nervous system

(Perry, et al. 2014)
Week 2 (4/6/15)

Transfers:
- Sup<>sit and sit<>stand with supervision

Ambulation:
- 100’x2; 150’x1 MinA for steadying
Week 2 (4/6/15)

Stair Negotiation:
◦ 16 stairs with B HR supervision using reciprocal gait pattern
◦ 8 stairs with 1 HR supervision using reciprocal gait pattern
◦ Curb Step MinA, HHA
Obstacle Course
Foam
Week 2 (4/6/15)

Berg Balance Scale:
◦ Increased to 29/56 (from 15/56 on 3/31/15)
◦ Remains fall risk (<45) but minimal detectable change met (4.6)

Oculomotor HEP:
◦ VOR 1&2
◦ Smooth Pursuit
◦ Saccades
Implementation of Assistive Devices

4/8/15:
- Initiated ambulation with standard cane
- MinA and VCs for sequencing required.
- 175’ MinA with std cane

4/9/15:
- Initiated amb with WW
- Max education for safety/sequencing/hand placement
- 175’ close S with WW
Implementation of Assistive Devices

Therapist- “How do you feel about using this walker at home because it allows you to be independent until you get more return of function?”

Patient- “There’s no way in #*! I’m going to use that!”
Gait without WW
What Do You Do???

VS.
Assistive Devices:

Things to consider:
◦ Device use compliance
◦ Allowing for increased SAFE mobility

Do they CAUSE falls?
◦ “The incidence of falls and recurrent falls was not associated with the use of multiple devices or any particular type of mobility device” (Gell, 2015. JAGS)
The Next Day (4/10/15)...

After the first walk of the morning without a device -
◦(PT trying to be more hands off and allow patient to lose balance)

“Maybe I should try that walker thing.”
Week 3 (4/13/15)

Improved saccadic eye movements, smooth pursuit, and VOR×1

Ambulation:
◦ 150’ without AD, MinA when turning
◦ 200’x2 Supervision with WW

Stair Negotiation:
◦ 12 stairs using R HR ascend and L HR descend with Supervision
Gait With Walker
Obstacle Course
# Day of Discharge (4/14/15)

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<thead>
<tr>
<th>Transfers</th>
<th>Evaluation (3/31/15)</th>
<th>Discharge (4/14/15)</th>
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<tr>
<td>Min Assist</td>
<td>Modified Independent</td>
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<td>Ambulation</td>
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<td>Deferred</td>
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<td>12 with 1 HR, Supervision</td>
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Day of Discharge (4/14/15)

HEP:
- Standing TE Program
- Oculomotor Exercises

D/C Instructions:
- HANDS with transfers
- Use WW when alone
- Do not negotiate stairs alone
Conclusion:

Challenge your older patients

Utilize evidence based practice as much as possible

Use your clinical judgement when prescribing assistive devices
References


References


Thank You!