Evidence-based Strategies for Community Reintegration

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OBJECTIVES

Course participant will be able to:
1. Identify best practice for facilitating community based reintegration in the outpatient setting.
2. Create a comprehensive plan of care that includes balance and gait activities based upon thorough evaluative strategies.
3. Identify effective strategies for enhancing communication between the interdisciplinary team.
4. Apply knowledge from case presentations to his/her current neurological caseload when applicable.

Case Study

• Introduction to Case – Mr. Z
  – Age 31 at time of incident, now 32 years old
  – Social History:
    • Married with 1 young daughter
    • Marine Corps veteran who served from 2003 to 2008, 3 combat deployments to Iraq
    • Studying health and human performance with hopes of being a personal trainer
Case Study

• Past Medical History:
  – Shoulder pain
  – Bilateral inguinal hernias
  – Dyslipidemia
  – Impaired fasting glucose
  – GERD
  – Epistaxis
  – Depression
  – PTSD

Case Study

• September 2014:
  – Patient was found unresponsive in his bed with missing benzodiazepines from his prescription by his wife and EMS was called. Patient was breathing and had a pulse at time of call.
  – In ambulance on route to hospital, patient vomited and aspirated, then went into cardiac arrest
  – Was pulseless and experienced hypoxic moment for at least 6 minutes until he was revived by CPR
  – Admitted to a private sector hospital ICU where he was on ECMO for 4 days and intubated with artificial ventilation for 12 days
Case Study

• September 2014:
  – Patient was unresponsive to noxious stimuli for approximately 10 days. Once he regained consciousness, quickly became alert and oriented
  – Was transferred to VA hospital 15 days after incident to acute care then was transferred to Acute Inpatient Rehabilitation floor 2 days after that
  – PT, OT, Speech consulted. Psychology and social work following throughout

Case Study

• Initial inpatient PT evaluation:
  – Admitted as max A x 2 for all mobility
  – Discharged 10/9/2014 at mod I/Ind level for all mobility with a 19/30 on the FGA
• Initial inpatient OT evaluation
  – Dependent for all ADLs
  – Discharged 10/9/2014 at mod I/Ind level for all ADLs
• Initial inpatient Speech evaluation
  – Found to dysarthric speech, some deficits in sequencing, thought organization, mental flexibility, and increased time needed for processing
  – Ind for all communication upon discharge
Case Study

• Outpatient PT evaluation completed 2 weeks after discharge from inpatient rehab
• Goals:
  – Return to running at least 1 mile
  – Be able to play with his young daughter (15 months old)
  – Improve his balance
  – Hopes to return to school to become a personal trainer

Case Study

• Complications that developed during outpatient PT episode of care:
  – Post-hypoxic myoclonus (Lance Adams syndrome)
    – treated with Keppra
  – One episode of seizure like activity while on Keppra, but EEG and neuro work-up negative
  – Meniscal tear in R knee
  – Spasticity developed in LLE
  – Thoracic level disc derangement
Evaluation

• Outcome Measures Chosen:
  – HiMAT
  – Community Balance and Mobility Scale

High Level Mobility Assessment

• **MDC** (Williams et al 2006)
  – Increase of 4 points or decrease of 2
• **MDIC**: No values available
• **Population tested**: acquired and traumatic brain injury
• **What it looks at**: high level motor performance in TBI patients
• **ICF classification**: Body function, Activity
• **Video**
Community Balance and Mobility

- **MDC** (Howe et al 2006)
  - 7.5 and 9.6
- **MDIC**: Not established
- **Population tested**: TBI, Cerebral Palsy, CVA, Geriatric, Acquired brain injury, Healthy adults
- **What it looks at**: detects high-level balance/mobility deficits during community-based tasks
- **ICF classification**: Body structure, Body function
- **Video**

Other Outcome Measures

- **Subjective Measures**
  - Patient Specific Functional Scale
  - ABC Scale
  - AMPAC
- **Subjective EDGE recommendations-TBI**:
  - Community Integration Questionnaire
  - Global Fatigue Index
  - Sydney Psychosocial Reintegration Scale
  - Disability Rating Scale
- **Subjective EDGE recommendations-Stroke**:
  - Goal Attainment Scale
  - Stroke Impact Scale
Other Outcome Measures

- 6 min walk
- 10 m walk
- Functional Gait Assessment
- Dynamic Gait Index

Research to Support Intervention

- Citation List-Refer to Prezi
Interventions

• Gait Training
  – Gait analysis
  – Treadmill training
  – Body weight support

• Running
  – Treadmill training
  – Overground training
  – Propulsive: leaping, bounding, skipping
  – Coordination training: lower body disassociation, rapid limb coordination

Interventions

• Balance
  – Static: single limb stance, tandem stance, variable surfaces, visual confusion/occlusion
  – Dynamic: agility ladder training, walking and turning, quick weight shifts, ambulation with direction changes, VOR and VOR cancellation with walking
  – Variable surfaces
Interventions

• Strengthening
  – Core stability-abdominals and hips
  – Ankle stability
  – Full body: can add in Bosu to increase difficulty
• Dual task training
  – Cognitive dual task training: lists, every other letter of alphabet, storytelling
  – Treadmill: word finding, Sudoku
  – Outdoor
  – Scavenger hunts-put in busy environments, different levels

Importance of the Interdisciplinary Team

• Physical Medicine and Rehabilitation: medical management
  – Spasticity-medication management
  – Orthotics
• Occupational therapy
• Speech therapy
• Neuropsychology
• Social workers/Case managers-referral purposes
Take Home Points

1. Selecting the best outcome measures based upon impairments and limitations will lead to selection of the most appropriate treatment strategies for community reintegration.

2. Current treatment strategies to enhance function for mild impairment and high level functioning patients include: gait training/running, static/dynamic balance interventions, strengthening, and dual-task activities.

3. The communication between members of the interdisciplinary team facilitates comprehensive management for the whole patient.

References

References