

Multiple Sclerosis Care: An Interdisciplinary Approach to Acute Relapses

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Outline

- Identifying Relapses vs. “Pseudo-exacerbations”
- Functional limitations commonly seen with acute relapses
- Responsibilities of the Rehabilitation Team
- Evidence that rehabilitation is essential to the acute relapse management
- Decision making: Which rehab setting is best?

- “Traditionally, it has been recommended that people with MS should avoid neurologic rehabilitation during the acute period of relapse because of the fear of causing another relapse. However, recent clinical trials confirm the value of physical therapy programs during the acute phase of the relapse...” Cabrera-Gomez, 2007

Identifying Relapses

- Rehabilitation professional maybe be first point of contact.
 - If patient is already in PT, OT, speech etc.
 - If patient may feel more comfortable contacting rehab professional with new concern
- Presenting symptoms may vary or may be a combination of visual disturbances, motor and sensory impairments, balance issues, and cognitive deficits
 - Comprehensive evaluation/re-evaluation should identify new or worsening symptoms
 - Rule in/out other causes
 - Musculoskeletal
 - Infection (UTI, pressure sores etc.)
 - Heat induced
 - Stress at home/job/with caregivers

Impairments Contributing to Functional Limitations

- Weakness/Spasticity
- Balance/Coordination
- Sensation
- Cognitive
- Speech/Swallowing difficulties

Multidisciplinary Strategies of the Team

- Physical therapist:
 - Exercise program to enhance strength and endurance
 - Balance retraining (by addressing the underlying impairments)
 - Transfer and Gait training (including assessment for mobility aids)
 - Open dialogue with physician/nurse about medication management
- Occupational therapist:
 - ADL retraining
 - Energy conservation techniques
 - Assessment for adaptive equipment
 - Cognitive rehabilitation
- Speech/language pathologist
 - Assessment and management of dysarthria, dysphonia, and dysphagia
 - Cognitive rehabilitation

The team continued...

- Neuropsychologist/psychologists/psychiatrists/counselors
 - Assessment of cognitive limitation
 - Identification and treatment of mental/emotional health concerns
- Nursing
 - bladder and bowel management
 - Symptom management/medical management
- Physicians
 - Medical management
 - Referrals to other health care providers
- These multidisciplinary strategies work to enhance function and promote safety and quality of life throughout the disease course ([National MS Society, 2004](#)) (.pdf)

Evidence for Rehabilitation

- Intravenous Methylprednisolone (IVMP) plus rehabilitation by a multidisciplinary team is more effective than IVMP alone (Craig et al., 2003) in relapse management.
 - 20 Control patients received the equivalent of the current standard ward routine for IVMP management, including three days IVMP, commencing on any weekday.
 - Referral to other disciplines was medically identified and patients could be referred for subsequent outpatient therapy if this was deemed appropriate.
 - 20 Treatment patients received a planned, multidisciplinary team assessment, including three days IVMP. All members of the MDT were aware of this group's admission beforehand, allowing allocation of assessment time.
 - Treatment depended on patients' goals and referral to other agencies on discharge was arranged.
 - Therapy treatment for both groups **was not standardized** as symptom presentation varied and therapy was patient focused to meet subjects' needs at the time.

Main outcome measures

	Mean Scores Baseline	Mean scores at 3 months	Mean Change Scores B-3 months
GNDS			
Control:	21.5	19.7	-1.75
Treatment:	21.1	13.1	-9
AMCA			
Control:	48	54.3	6.3
Treatment:	56.1	69.1	13
HAPA (adj)			
Control:	35.1	53.2	18.1
Treatment:	33.2	36.7	3.5

Guy's Neurological Disability Scale (GNDS) (0= normal, 6= worse),
Amended Motor Club Assessment (AMCA) (0 = poor motor function; 76= normal),
Human Activity Profile (HAP) (0 = low activity level; 94 = normal activity level)

Liu C, Playford ED, Thompson AJ et. al (2003)

- Evaluated the effect of relapsing remitting patients that were admitted to neurological rehabilitation unit.
 - N=90 Relapsing Remitting patients with MS
 - Multidisciplinary rehabilitation, relatively short stay
 - Outcome measures were assessed at admission and discharge
 - Patients showed considerable improvement upon discharge in the following measures:
 - -.5 improvement on the EDSS
 - +4 improvement on the Barthel Index
 - +12 improvement on the FIM
 - 8.9 VAS score of patient's perception of rehabilitation impact

Kidd D, Howard RS, Losseff NA, et. al (2013)

- 79 patients with MS admitted over a 16-month period for multidisciplinary rehabilitation
 - Fourteen patients were recovering from a recent relapse (19%)
 - 65 were in the progressive phase of the disease (81%)
- The patients were clinically assessed and rated on admission and discharge
 - Kurtzke's Disability Status Scale (DSS)
 - Barthel Index (BI)
 - Environmental Status Scale (ESS).
- A statistically significant functional improvement was seen in
 - 65% of patients as determined by the Barthel Index
 - 44% improved on the ESS.
 - Improvement was most marked in those in whom a reduction in impairment had occurred during a relapse
 - These results suggest a beneficial effect from admission to a neurorehabilitation unit for patients with MS, including those in the progressive phase of the disease, although the role of rehabilitation in the long-term management of MS remains to be defined.

Research thus far...

- The intensity and setting of adequate rehabilitation services often depend on the severity of the problems and the facilities available.
- Variable results on impairments, but many have shown that rehabilitation services decrease disability and improve quality of life and that these improvements last up to several months.
- Most MS rehabilitation is done in the home or outpatient setting
 - Physical therapy is the most frequent service requested, followed by occupational therapy, psychotherapy, and massage therapy
 - Other requested services are social workers and speech and language therapists
- Sixty-six percent of patients with MS have used rehabilitation services

Decision Making – CVA model



Gresham GE, Duncan PW, Stason WB. Post-Stroke Rehabilitation. Rockville (MD): Agency for Health Care Policy and Research (AHCPR); 1995 May. (AHCPR Clinical Practice Guidelines, No. 16.) 5, Screening for Rehabilitation and Choice of a Setting.

Threshold Criteria for Admission to a Rehabilitation Program

- Patient is medically stable or moderately stable
- Patient has one or more persistent disabilities
- Patient is able to learn
- Patient has enough physical activity endurance to sit supported for at least 1 hour a day and to participate actively in rehabilitation
 - less than this minimal level = home or in a supportive living setting

Medical Rehabilitation Unit

- Staffed by the full range of rehabilitation professionals--nurses, physical and occupational therapists, speech-language pathologists, psychologists, social workers, recreational therapists, and physicians.
- A physician skilled in rehabilitation is available 24 hours a day
- Average length of stay < 14 days
- Team conferences weekly
 - Establish rehabilitation goals and develop a rehabilitation plan, assess patient progress, identify barriers or complications and revise the rehabilitation goals or plan accordingly, and develop a plan for discharge or transfer to another type of rehabilitation program ([National Association of Rehabilitation Facilities, 1988](#)).
- More intense and comprehensive than rehabilitation in other settings and **requires greater physical and mental effort from the patient.**

Rehabilitation in Skilled Nursing Facilities

- Skilled Nursing facilities may be either hospital based or community based.
 - Hospital-based
 - Patients that have the potential to improve enough during 2 or 3 weeks of treatment to become suitable candidates for inpatient hospital, home, or outpatient rehabilitation.
 - Community- based
 - Vary widely in their capabilities
 - Some provide only supportive care and low-level rehabilitation services
 - Some have comprehensive evaluations and interdisciplinary teams with coordinated rehabilitation programs that are similar to, though usually less intense than, hospital programs
 - Physician coverage varies (may not have rehabilitation physician)
- Patients, physicians, and families/caregivers should know the services available and intensity of the rehabilitation in the different facilities when making a decision.

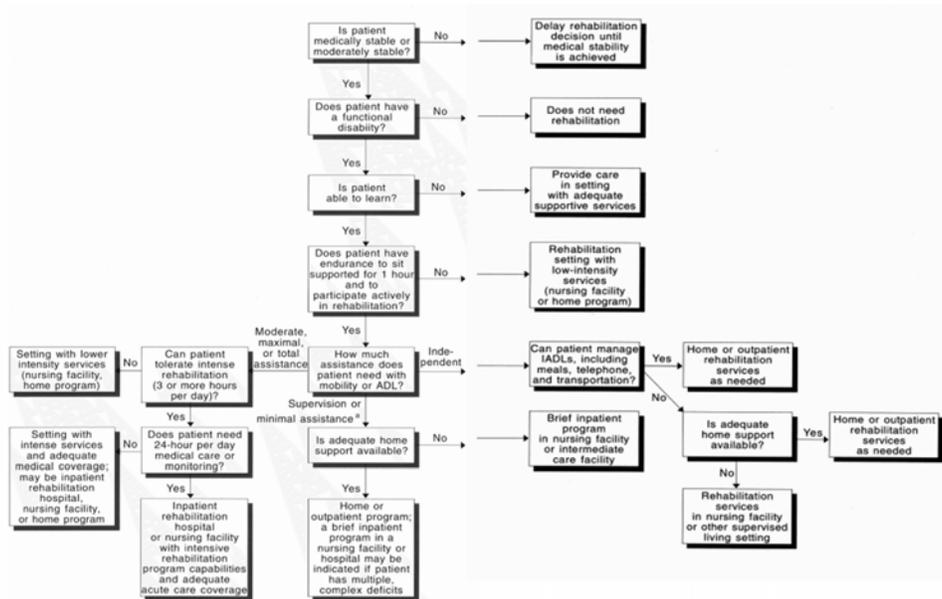
Home Rehabilitation

- Designed for patients who are medically stable and require only contact with physical or occupational therapy or nursing services (not direct physician supervision)
- Most health agencies provide the full scope of services including nursing, physical therapy, occupational therapy, speech therapy, medical social services and personal care services, as well as rehabilitation nursing and mental health nursing.
- Advantages include the ability to adapt the therapy to fit the current living situation and transportation is not needed (*NOTE – some payers will ONLY pay if patient is confined to home, not out of convenience)
- Disadvantages include increased isolation, little to no equipment available, as well as an increased reliance on the caregiver

Outpatient Rehabilitation

- Hospital outpatient departments or freestanding facilities
- Comprehensive rehabilitation could be offered or individual rehabilitation services at each site.
- Typically 2-4x a week for 1 hour per discipline
- Transportation is essential to the outpatient rehabilitation program

Rehabilitation setting decision making



Gresham GE, Duncan PW, Stason WB. Post-Stroke Rehabilitation. Rockville (MD): Agency for Health Care Policy and Research (AHCPR); 1995 May. (AHCPR Clinical Practice Guidelines, No. 16) 5. Screening for Rehabilitation and Choice of a Setting.

Cost - Levels of Care

- In 2002 a cost analysis study for acute MS relapses was performed (O'Brien 2003)
- Divided into major cost categories
 - Weighted average of component costs applied to the proportion of patients using the service. Thus, the individual components will not add up to the overall cost
- 1. **Low** – Physician visit and related meds
 - AVG Cost = \$243
- 2. **Medium** – ER visit, observation, IVMP, Home care, medications, Rehabilitation services
 - AVG Cost = \$1,847
- 3. **High** – Acute Hospital stay and related services
 - AVG Cost = \$12, 870

High Level Care Relapses

- 4,634 acute MS relapse cases identified
- The mean LOS for a hospital stay was 5.2 days (range: 1–353)
 - Mean cost 8,782 (range: \$410- \$1,045,376)
- Case fatality rate was 1%. Of those who survived the hospitalization:
 - 59% were discharged to home
 - 14% with home health care services
 - Mean cost 2,043
 - 10% to inpatient rehabilitation (mean LOS = 15 days, range: 1–126 days)
 - Mean cost \$14,943, range: \$645–\$105,480
 - 11% to a skilled nursing facility (mean LOS = 28 days)
 - Mean cost \$10,514
 - 1% to nursing home care
 - Mean cost per 90 day stay \$ 12, 894
 - Of those discharged initially to a rehabilitation facility or unit
 - 1% died during their stay
 - 8% were transferred to a skilled nursing facility
 - 38% required home health care services after discharge
 - Remainder were followed as outpatients.

Conclusion

- Rehabilitation professionals should be skilled in appropriately identifying relapses and refer patients to their managing physician
- Rehabilitation services especially using the interdisciplinary approach have been shown to decrease disability and improve quality of life in patients with acute MS relapses
- The decision making process to select the most appropriate setting for the patient to receive rehabilitation services should include consideration of the patient's limitations, the family/caregiving situation as well as the expected outcome for each patient

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