PM R 9 (2017) 629-635

www.pmrjournal.org

Point/Counterpoint

Guest Discussants: Leroy R. Lindsay, MD, Kirk Lercher, MD
Feature Editor: Michael W. O'Dell, MD

Should This Patient With Global Aphasia After a Left Cerebral Stroke Be Admitted to Your Hospital-Based Inpatient Rehabilitation Unit?

CASE SCENARIO

You are the medical director of a very busy, 20-bed, general inpatient rehabilitation unit (IRU) at a community hospital. About 40% of admissions to the unit are persons with moderate and severe stroke from the geographic region, and your census runs very nearly 100% capacity, usually with a waiting list. The neurology service asks you to assess a 60-year-old man with a long history of hypertension and diabetes mellitus who is now 6 days post a large left middle cerebral artery (MCA) ischemic stroke. He presented with sudden onset of weakness of the right side and difficulty speaking. He lives in a single-story, accessible home with his wife, who is supportive but must continue working to maintain their health insurance.

Therapy assessment on the acute neurology floor, where he receives a total of no more than 60 min/d therapy, indicates he transfers with maximum assistance of one person with a dense right hemiparesis. He has not yet taken steps. There has been a slight improvement in active movement of the lower limb over the past 2 days but still no more than trace. He is on a pureed diet with thickened liquids after a modified barium swallow indicated laryngeal penetration and aspiration risk. The assessment by a speech language pathologist (SLP) indicates a global aphasia with limited abilities in either comprehension or expression. All therapists note an inconsistent performance during treatment sessions. The IRU has only 2 beds available over the next 5 days, and 6 patients with diagnoses ranging from mild stroke to multiple trauma are waiting for a rehabilitation bed. Given the degree of aphasia and weakness reported 2 weeks' poststroke and the current demand for beds, should this man be a priority to come to your IRU? Arguing in favor of an IRU admission is Leroy R. Lindsay, MD, and against is Kirk Lercher, MD.

Leroy R. Lindsay, MD, Responds

I would admit this patient to the acute inpatient rehabilitation unit (IRU). This is a complex case that touches on a multitude of considerations that accompany the rehabilitation admission process. Two primary questions one must ask when considering a patient for IRU admission are: (1) will there likely be medical or rehabilitation benefit, and (2) is the IRU the most appropriate level of care.

Let us first explore the medical aspect. This patient has a large, left middle cerebral artery (MCA) infarction with right hemiplegia, severe poststroke aphasia (possibly global aphasia), and dysphagia. This is a significant departure from his previous level of function and given the debility associated with stroke complicated by aphasia, it is of the utmost importance that he receives the care he needs to facilitate recovery. He presents a significant challenge to the neurology and rehabilitation teams as they attempt to prognosticate and direct him to the most appropriate rehabilitation setting.

Many attempts have been made to predict recovery after stroke using various scales and serial examinations to establish benchmarks [1-3]. For example, the proportional recovery model states that within 6 months, upper limb impairment resolves by a fixed proportion, which is 70% of each patient's maximum possible improvement [3]. However, patients with other common stroke symptoms, such as communication deficits, homonymous hemianopia or blindness, and visuospatial neglect, were excluded from these studies, leaving it incomplete and not generalizable [1-3]. Dunn et al [1] noted in a prospective cohort study that 1 week after stroke, recovery of upper extremity weakness and aphasia was not predictable based on initial impairment level, lesion volume, or age. These prediction models

1934-1482/$ - see front matter
http://dx.doi.org/10.1016/j.pmrj.2017.05.002

are predicated on an ideal healing environment, well-managed medical comorbidities, and the receipt of standard-of-care interventions. Moreover, this requires careful guarding against sequelae that would limit the ability to benefit from said recovery. In this case, if the patient does not recover significantly from his current baseline, he will remain severely impaired and require a level of assistance that his wife will be unable to provide, as she is still working full time. Given that any improvement noted after 1 week likely represents one third or less of his total recovery, this patient must have access to services and professionals dedicated to work intensively on motor control, speech, and swallowing function [1]. With this uncertainty, we must accept the possibility of his improvement in the near future. I believe we must be aggressive in our attempts to return these patients to some level of independence, function, and societal integration.

Global aphasia has been described as a heterogeneous group of linguistic impairment syndromes with the unifying theme of severe communication dysfunction across all modalities [4]. After acute stroke, approximately 32% of patients experiencing aphasia will have the global subtype. Within 1 year, however, this proportion decreases to 7% with less severe, more fluent communication [5]. Many clinicians still view global aphasia as an untreatable and effectively hopeless condition. As a result of this perceived "hopelessness" and difficulty clearly defining the diagnosis, patients with global aphasia often are excluded from research studies and clinical trials of patients with chronic aphasia. Despite there being a relatively small portion of stroke patients with poststroke aphasia, it has been stated that global aphasia is more isolating and debilitating than blindness or hemiplegia [6].

For this reason, we must consider the benefits of participation in an acute inpatient rehabilitation programs. In the IRU, patients will receive serial evaluations by a speech language pathologist (SLP), who can more definitively evaluate speech, distinguish aphasia from apraxia, and implement compensatory and remedial strategies. In addition, experienced therapists can monitor for improvements, educate family, and trial new techniques and adjunct technologies. Mallet et al [7] described the effective use of a computer tablet—based speech therapy when directed by a therapist who is trained in the use of this technology. Many patients present with global deficits but subsequently are noted to have some relatively preserved aspect of language (reading, writing, comprehension, etc). A recent Cochrane review, which reviewed evidence from 3002 patients, found that speech and language therapy resulted in statistically significant improvements in communication, reading, writing, and expressive language. There is some support that a greater intensity and dose, or over a long duration of time, may be more beneficial to patients who can tolerate it.

In addition, initiation of aphasia therapy early in the rehabilitation process may improve outcomes and have persistent benefit [8]. When considering the relative shortage of SLPs, the likelihood of receiving intensive therapy for aphasia outside of an IRU is low [9]. To add further support to the importance of admission to an IRU for this patient, consider access to adjunct speech therapy groups, outings, and response to neuropharmacologic treatment with medications such as bromocriptine, amphetamines, piracetam, and donepizil [10,11]. Physicians familiar and comfortable with neuropharmacologic agents will more likely be found in an acute inpatient rehabilitation setting. In addition, therapists working with the patient with increased frequency and intensity may be able to detect subtle improvements or side effects with changes to those classes of medications.

It has been suggested that severe poststroke aphasia can impede rehabilitation for motor recovery if the patient cannot follow directions or retain information [4]. Understandably, justifying an acute rehabilitation stay under these circumstances would be difficult. However, in our case, the patient is at least demonstrating inconsistent understanding. It is possible that with acute inpatient rehabilitation the intensity and frequency of interdisciplinary therapies will foster the best chance for recovery [12].

Interestingly, the embodied cognition theory suggests that language and motor systems are integrated and may augment one another. This construct suggests that intentional observation of normal human movements may enhance the recovery of verbs in nonfluent aphasia [13]. Page and Harnish [14] also noted that mental practice could foster on both motor and language recovery. These concepts are being tested primarily with patients with chronic aphasic; however, they have potential for use in the acute period after stroke as well.

Given that hemiplegia and global aphasia are associated with high morbidity, mortality, and significant caregiver burden [12], any techniques that could improve mobility and/or communication would be life altering to the patient and his family. In the acute IRU setting, they will have the greatest opportunity to be exposed to both standard and experimental therapies [15]. Moreover, the IRU offers the most structured environment in which they can begin communication partner training and have intensive caregiver training sessions to better aid this complex patient [16]. A recent survey of discharge planners revealed the perception that nonclinical factors such as insurance and family/patient preference had a greater influence on poststroke rehabilitation placement than physicians [17,18]. As consultant physiatrists, we must always be aware of the clinical and nonclinical factors that influence these decisions and proactively guide patients toward the most appropriate setting that will provide greater functional gains in mobility, daily activity, and applied cognition whenever possible [17,18]. Although the patients on the wait list are