Prognosis in Aphasia: What are the Factors?

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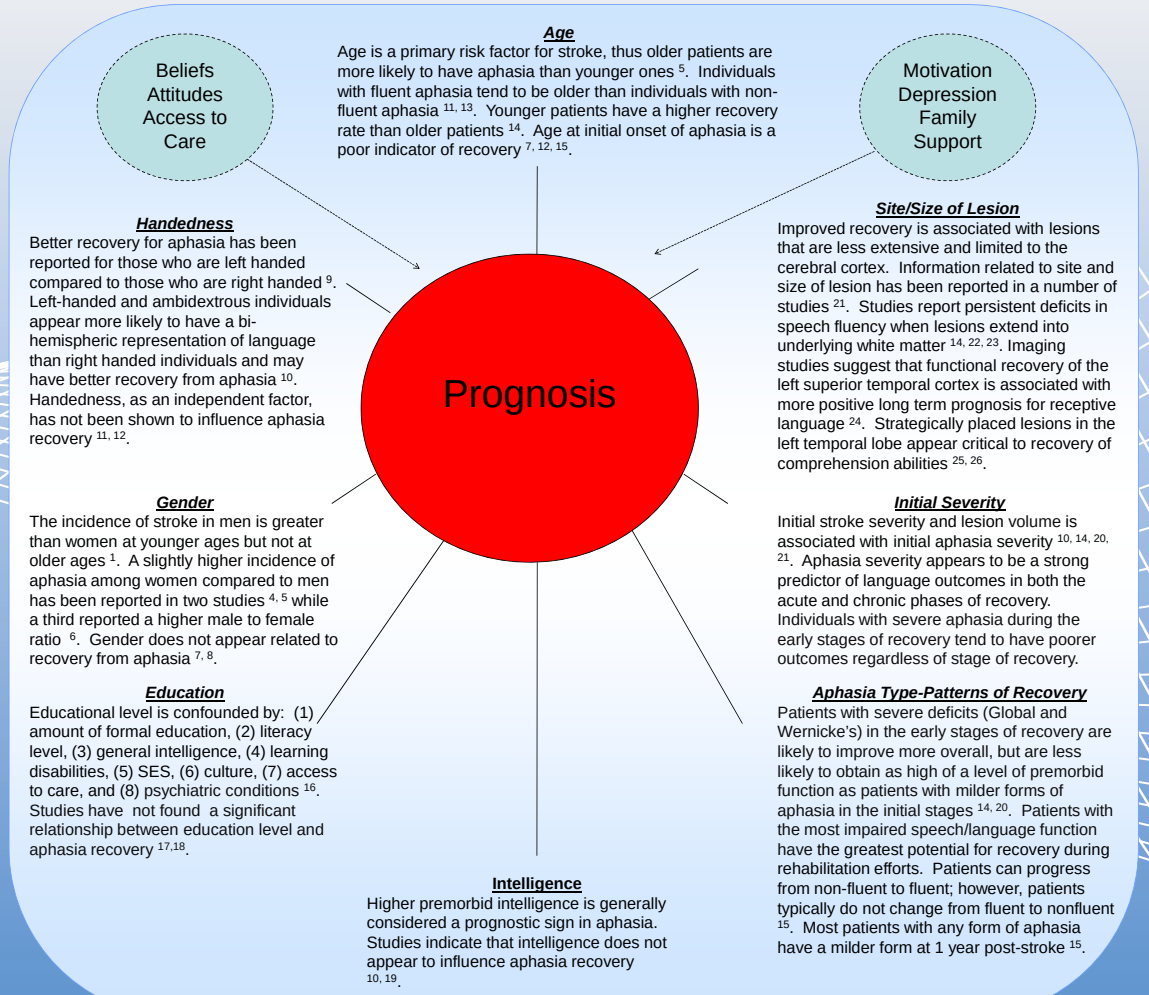
Background

Each year more than 700,000 people suffer from stroke, and there are 1.5-2.0 million stroke survivors [1]. Of these stroke victims, 100,000 patients acquire aphasia each year. It is believed that there are about 1 million people affected by aphasia in the United States [2]. Clinicians are challenged to consider the complex interaction between patient-specific and stroke-specific factors that influence aphasia recovery. Evidence continues to emerge related to both patient-specific and stroke-specific factors that are believed to influence aphasia recovery. This information must be considered carefully when providing prognostic information to patients and families.

A prognosis is a prediction of the course of a disease or condition based upon experience, intuition, and evidence based information [3]. Determining a prognosis in aphasia requires consideration of a multitude of inter-related factors. Identifying the correct combination of factors critical to an accurate prognosis is a daunting task for the new clinician. With the widespread distribution of information from the internet, clinicians are facing new challenges because clients, and loved ones are now armed with information that must be carefully considered when discussing and providing prognostic information.

Purpose: To explore the current literature related variables associated with aphasia (age, handedness, gender, educational level, intelligence, size/site of lesion, initial severity, aphasia type/pattern of recovery) that may offer a foundation for the novel clinician to make more accurate predictions of aphasia recovery.



Age

Age is a primary risk factor for stroke, thus older patients are more likely to have aphasia than younger ones [5]. Individuals with fluent aphasia tend to be older than individuals with non-fluent aphasia [11, 13]. Younger patients have a higher recovery rate than older patients [14]. Age at initial onset of aphasia is a poor indicator of recovery [7, 12, 15].

Handedness

Better recovery for aphasia has been reported for those who are left handed compared to those who are right handed [9]. Left-handed and ambidextrous individuals appear more likely to have a bi-hemispheric representation of language than right handed individuals and may have better recovery from aphasia [10]. Handedness, as an independent factor, has not been shown to influence aphasia recovery [11, 12].

Gender

The incidence of stroke in men is greater than women at younger ages but not at older ages [1]. A slightly higher incidence of aphasia among women compared to men has been reported in two studies [4, 5] while a third reported a higher male to female ratio [6]. Gender does not appear related to recovery from aphasia [7, 8].

Education

Educational level is confounded by: (1) amount of formal education, (2) literacy level, (3) general intelligence, (4) learning disabilities, (5) SES, (6) culture, (7) access to care, and (8) psychiatric conditions [16]. Studies have not found a significant relationship between education level and aphasia recovery [17,18].

Site/Size of Lesion

Improved recovery is associated with lesions that are less extensive and limited to the cerebral cortex. Information related to site and size of lesion has been reported in a number of studies [21]. Studies report persistent deficits in speech fluency when lesions extend into underlying white matter [14, 22, 23]. Imaging studies suggest that functional recovery of the left superior temporal cortex is associated with more positive long term prognosis for receptive language [24]. Strategically placed lesions in the left temporal lobe appear critical to recovery of comprehension abilities [25, 26].

Initial Severity

Initial stroke severity and lesion volume is associated with initial aphasia severity [10, 14, 20, 21]. Aphasia severity appears to be a strong predictor of language outcomes in both the acute and chronic phases of recovery. Individuals with severe aphasia during the early stages of recovery tend to have poorer outcomes regardless of stage of recovery.

Aphasia Type-Patterns of Recovery

Patients with severe deficits (Global and Wernicke's) in the early stages of recovery are likely to improve more overall, but are less likely to obtain as high of a level of premorbid function as patients with milder forms of aphasia in the initial stages [14, 20]. Patients with the most impaired speech/language function have the greatest potential for recovery during rehabilitation efforts. Patients can progress from non-fluent to fluent; however, patients typically do not change from fluent to nonfluent [15]. Most patients with any form of aphasia have a milder form at 1 year post-stroke [15].

Intelligence

Higher premorbid intelligence is generally considered a prognostic sign in aphasia. Studies indicate that intelligence does not appear to influence aphasia recovery [10, 19].

Summary

A multitude of inter-related variables must be considered when determining a prognosis for aphasia. While a prognosis may only represent a clinician's "best guess" [3], the current literature offers evidence that when integrated could offer novel clinicians a framework to facilitate a more evidence-based assessment of the patient's speech/language difficulties and potential for recovery. This presentation highlights evidence from the current literature that can serve as a guide for evidence based prognostic statements.

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