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Acute care management of stroke:

Preface

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Stroke is a leading cause of mortality and disability. Worldwide in 2010, there were an estimated 11 569 538 events of incident ischemic stroke and 5 324 997 events of incident hemorrhagic stroke, with 5 874 142 individuals dying from stroke (1). Communication and swallowing impairments are common post-stroke sequela. The spectrum of communication impairments includes language, cognitive/communication, and motor speech impairments. Among stroke survivors, 30–60% present with communication impairments (2,3). Aphasia is present in 15% (4) to 33% (2) of individuals with acute stroke. Up to 50% of individuals experience dysphagia in the acute post-stroke period and subsequently have poorer health and functional outcomes (5, 6). The acute management of stroke, the topic of this issue of *Seminars*, is vitally important in addressing communication and swallowing impairments to optimize long-term outcomes.

In the acute care setting, assessment of dysphagia is a major clinical activity for speech-language pathologists given the high incidence rates of post-stroke dysphagia. Pisegna and Murray provide a comprehensive review of the use of laryngoscopy to assess swallow function in the stroke population. They outline their decision-making process of when to use fiberoptic endoscopic evaluation of swallowing, and highlight considerations particularly relevant to the acute stroke population, such as secretions, swallowing frequency, and pharyngeal squeeze elicitation.

In the next two articles, motor speech impairments are addressed. Spencer describes the role of the speech-language pathologist in the evaluation and treatment of dysarthria. She offers her insights regarding differential diagnosis and encourages a focus on patient- and caregiver-education, as well as communication-oriented and physiologic supports in the acute care setting. Basilakos explains cutting-edge advances in the management of apraxia of speech: perceptual and acoustic measures in the differential diagnosis of apraxia of speech and the use of neuroimaging to facilitate clinical decision-making. Readers are urged

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to remain abreast of the literature as these emerging approaches show promise for clinical application.

Rohter et al. and Baron et al. offer assessment and treatment innovations with more immediate clinical application. Rohter and colleagues describe their unique use of the electronic medical record to develop a technology-assisted evaluation of aphasia. They leveraged frameworks from implementation science to develop a standardized assessment battery for aphasia in acute care. Their pilot implementation revealed that information content of medical notes was more consistent and complete post-implementation than pre-implementation with implications for improved monitoring of patients' status and continuity of care. Baron and colleagues astutely apply principles of quality treatment to group aphasia therapy, a mainstay of speech-language pathology intervention. They present the goals and procedures of quality group therapy in a comprehensive inpatient rehabilitation setting and the patient-centered, functional benefits of this intervention.

The final three contributions by Sebastian and Breining, Shahid et al., and Tippett et al. highlight the advances in neuroimaging have contributed to our understanding of brain-behavior relationships and stroke recovery. Studies employing structural and functional magnetic resonance imaging (MRI) are now commonplace in the speech-language pathology literature. In their expert review, Sebastian and Breining discuss the various structural and functional imaging methods currently used to study language deficits in acute stroke, the advantages and the limitations of each imaging modality, and research and clinical applications of each modality in the study of language deficits. Shahid and colleagues illustrate the application of neuroimaging in acute stroke to show that the rate of semantic errors correlates with the extent of tissue dysfunction in left posterior superior temporal gyrus (pSTG) and retrolenticular white matter. Their findings are germane to clinicians in that treatment for individuals who have damage to pSTG or retrolenticular white matter, and others who make semantic errors on word comprehension tasks might involve teaching distinctions between the target and semantically related words to improve comprehension. And finally, Tippett et al. employ lesion mapping techniques in individuals with acute right hemisphere (RH) stroke to investigate lesions associated with impaired recognition of prototypic emotional faces before significant neural reorganization can occur during recovery from stroke. Right hemisphere stroke patients were significantly less accurate than controls on a test of emotional facial recognition for both positive and negative emotions. Patients with right amygdala or anterior insula lesions had significantly lower scores than other RH stroke patients on recognition of angry and happy faces. Given the implications for interpersonal interactions, therapy to improve facial expression recognition may be indicated in the right hemisphere stroke population, particularly those with amygdala and insula damage.

As guest editor, it is my hope that readers will find this issue of *Seminars* to be a thorough, progressive, and thought-provoking treatment of the topic of acute management of stroke. I thank all of the authors for their outstanding contributions to this issue. I am indebted to Heather Wright for her encouragement and enthusiasm along the way.

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