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Aphasia type and aging in Hindi-speaking stroke patients

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Abstract

In this study, the clinical profile of Hindi-speaking stroke patients with aphasia from northern India has been investigated. We examined the interactional effect between age and gender with aphasia type in 97 Hindi-speaking right-handed individuals, the majority of them with a confirmed diagnosis of a cerebrovascular accident. The subjects included in the study ranged from 3 weeks to two years post-onset with a diagnosis of a common classical aphasia (Broca's, Wernicke's, anomic, global, conduction, and transcortical) types involving both males and females. Also examined was the interaction between literacy and aphasia type since the subjects had varied exposures to education (total illiteracy to professional/university education). While the data reported here about Hindi-speaking aphasics are relatively in agreement with the age-aphasia type patterns discussed in western countries, nonetheless some differences were also observed. The mean age of Indian patients with aphasia was significantly lower. Also, in addition to some gender and literacy related differences, an outstanding difference was that many clinical symptoms that are known to co-occur with aphasia were not readily reported by subjects with stroke. © 2002 Elsevier Science (USA). All rights reserved.

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1. Introduction

It has been clinically confirmed in most published literature that there is a noticeable age gap between different clinical groups of aphasics, which is most

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noticeable between expressive and sensory types of aphasics. Individuals with Wernicke's aphasia, as a group, have been reported to be significantly older than those diagnosed with Broca's aphasia (Coppens, 1991; Basso, Capitani, Laiacona, & Luzzati, 1980; Eslinger & Damasio, 1981; Joannette et al., 1981; Meceli et al., 1981; Obler, Albert, Goodglass, & Benson, 1978; Code & Rowley, 1987; DeRenzi, Faglioni, & Ferrari, 1980; Kertesz & McCabe, 1977; Obler, Woodward, & Albert, 1984). With little variation, the general age range for subjects with Broca's aphasia is between 40 and 50, while the incidence of Wernicke's aphasia steadily increases with age peaking around 70 (Table 1). In general, there is a difference of over 10 years between the mean ages of these two groups of patients.

The reasons related to this clinically observed age difference between patients with fluent aphasia and non-fluent types of aphasia are not fully understood. Researchers have advanced various hypotheses; however, none of these can unequivocally account for the observed difference.

The four hypotheses that are most commonly discussed to explain the interaction between age and aphasia type are: *microgenetic model of progressive lateralization of language*, *selection bias hypothesis*, *age related changes in vascular distribution*, and *aging induced continuous cognitive changes*.

The microgenetic model of language lateralization proposes a progressive language lateralization throughout the adulthood. Brown and Grober (1983) argued that language lateralization is a dynamic process and therefore it continues over the life span. The association of age and aphasia type in the progressive context of lateralization is confirmed by the fact that a lesion in Wernicke's area would produce a motor aphasia in a child, conduction aphasia in the middle age, and Wernicke's aphasia in later years. This progressive lateralization within the dominant hemisphere suggests that expressive language lateralizes earlier whereas the lateralization of comprehension occurring later in life increasing the frequency of fluent aphasia in older subjects. Some evidence in support of the progressive lateralization has come from Obler et al. (1978), who noted the frequency curve of Wernicke aphasics to be higher in later life. However, no such increased frequency of sensory aphasics in later life was observed by others (Eslinger & Damasio, 1981; Harasymiw et al., 1981).

Extending further the gradual lateralization view, Joannette et al. (1983) argued for a progressive sub-corticalization of language in later years. They proposed that the expressive functions are lateralized first, which would account for the preservation of

Table 1
Mean age per aphasia category in five western studies

Studies	Aphasia type		
	Broca (<i>n</i>)	Global (<i>n</i>)	Wernicke (<i>n</i>)
Kertesz and Sheppard (1981)	59;0 (34)	66;8 (38)	67;7 (23)
Eslinger and Damasio (1981)	44;4 (11)	58;0 (17)	62;1 (27)
Meceli et al. (1981)	53;1 (28)	52;2 (13)	63;4 (55)
Harasymiw, Halper, and Sutherland (1981)			
Males	55;7 (87)	60;5 (40)	67;3 (41)
Females	55;7 (93)	65;9 (20)	61;8 (27)
Schechter (1985)			
1 Month post-onset	60;0 (94)	62;5 (103)	62;5 (34)
4–5 Months post-onset	59;5 (124)	64;1 (61)	66;6 (24)
Mean age	55.3	61.4	64.5

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