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Abstract

Objective:

Most studies documenting the longitudinal recovery of auditory comprehension in poststroke aphasia begin in the subacute phase. The present study aimed to address this gap by exploring the longitudinal changes in auditory comprehension from the acute to the chronic phase and their neural correlates.

Method:

Twenty-one Laurentian French persons with aphasia (PWA) following a first left middle cerebral artery stroke underwent three language assessments (acute: 0–72 hr, subacute: 7–14 days, chronic: 6–12 months postonset). Auditory comprehension was assessed at each time point using two tasks, sentence–picture matching and sequential commands. From the sentence–picture matching task, four measures were extracted (single-word, subject–verb, canonical subject–verb–object, and noncanonical subject–verb–object comprehension), while one measure was derived from the sequential commands task, totaling five measures. Lesion–symptom mapping (LSM) was used to identify the brain regions associated with comprehension impairments.

Results:

All five auditory comprehension measures showed significant positive changes between acute and chronic phases. Persistent comprehension impairments with canonical sentences and sequential commands were more likely to occur in the chronic phase. LSM analyses revealed that comprehension of noncanonical sentences was associated with lesions in the supramarginal gyrus and extended to the superior temporal gyrus (STG) and middle temporal gyrus (MTG). Similarly, the comprehension of sequential commands was associated with lesions in the MTG, extending to the STG and insula.

Conclusion:

The current findings suggest that PWA with more severe impairments in the acute phase reach a similar performance in the chronic phase than people with milder aphasia and suggest a critical role for the left MTG in the recovery of auditory comprehension, especially with complex stimuli.

