Summary

The research presented in the paper was to investigate the verbal fluency on a group of patients with damage to the right hemisphere of the brain, and to compare the level of performance of the task by patients with lateral ischemic focus and healthy person. The result of the research was to show whether the person after the right hemisphere stroke receives lower scores in verbal fluency tasks than those neurologically unencumbered and whether they show different patterns of the test performance. If the resulting data will prove lower opportunities for speaking of words by patients with a damaged right hemisphere of the brain, and thus the important role of the right hemisphere of the brain for language processes, will allow to verify the view on the exclusivity of relations of language functions of the left hemisphere of the brain as well as to increase the value of the test for verbal fluency in the diagnosis of language dysfunction in patients with damaged right hemisphere of the brain.

The study involved 51 patients with a diagnosis of ischemic stroke within the right hemisphere, and 51 people without brain lesions. One has used two types of tasks of phonemes fluency (the letter "k" and "p") and two types of semantic fluency tasks (categories "animals" and "fruits"). In case of the first criterion, the task consisted in speaking for one minute words that begin with the letter "p" and the letter "k", while in the case of the second task, providing as many names of animals and fruits starting with any letter. The following task level indicators were analyzed: total number of words, number of words correctly updated, the number of errors (neologisms, repetitions, words not complying with the criterion), the number of clusters (semantically related concepts and/or with similar sounding), the number of switches (switch from one to the next cluster) and size of semantic and phonological clusters. Comparisons were made between the study group and the control group.

According to the obtained results, persons after ischemic stroke located in the right hemisphere of the brain obtained lower scores in verbal fluency tasks compared to those neurologically unencumbered. They concern both alphabetic and semantic fluency. People from the research group obtained lower scores in terms of the total number of given words, number of correctly given words, number of errors, the number of clusters of semantic and phonological nature, number of semantic and phonological switching, semantic and phonological clusters size. The results obtained by the two groups differed significantly in terms of quantity, but similar patterns were observed when it comes to performances in terms of semantic aspect of spoken words. One has not indicated statistically significant differences between the respondent with a various in terms of the location brain pathology in terms of performance indicators of semantic
fluency tasks, while the alphabet fluency was performed better by persons with damage situated within the temporal lobe. The obtained results suggest that the proper course of generating words in semantic fluency tasks requires an unobstructed frontal, as well as temporal lobe function. In the case of alphabetic fluency, one observed greater share of the frontal lobe in the course of a recalling of words.

The above reports of verbal fluency disorders, damage to the right hemisphere of the brain, challenge the conventional views about the relationship between language functions only with the left hemisphere of the brain, and indicate the involvement of the right hemisphere in the process of updating words.