Summary

The doctoral dissertation consists of introduction, three theoretical chapters, five empirical chapters, including conclusions and summaries. The main purpose of the work was to define, how neurodynamic factors determine the picture of aphasia in the early stage of recovery, and also verify four main hypotheses.

Description of the methodology and interpretation of research results are preceded by theoretical considerations related to the essence and typology of aphasia, vascular etiology of aphasia (in other words ischemic stroke phenomenon), and also aspects of neurodynamics and neuroplasticity, i.a. problem of diagnosis of aphasia in so-called acute phase.

The empirical part of the dissertation was dedicated to the overview of the research methodology, including the description of the issues, as well as the procedures, taking into account the characteristics and criteria for the selection of the research group, the course and organization of research, and methods for the analyzing of the gathered data. The results of the research were presented into methodology of case studies, and then they were compiled and compared in the form of tables and graphs, which allowed to verify research hypotheses and formulate final conclusions.

The research was longitudinal and carried out in 2014-2018. The first three examinations were conducted at the Stroke Unit of the 5th Military Clinical Hospital in Krakow, and the last – fourth – in most cases also in patients' homes. The research group consisted of patients with aphasia after their first-ever ischemic stroke, including eight men and seven women. Each patient underwent a quadruple neurologopedic evaluation – three times during the hospitalization period at the stroke unit (on the 1st, 4th and 8th day of the stroke) and once in the post-hospitalization period, in the third month after stroke. This period was characterized as an early stage of recovery, for which the possibility of a strong impact of neurodynamic factors, which, apart from focal factors, shape a variable and often non-specific picture of aphasia, was recognized as a typical phenomenon. As a research tool, a self-developed Aphasia neurologopedic evaluation form in the early stage of recovery was used, which made it possible to diagnose the type of aphasia based on the clinical classification of T. Weissenburg and K. E. Mc Bride (1935), as well as determining
the severity of disorders within the adopted six-grade scale. The tool was adapted to the needs and abilities of patients in the acute phase, related to the period of hospitalization shortly after stroke. Due to its construction, it enabled the assessment of basic linguistic activities within the framework of verbal understanding and expression, as well as obtaining the necessary empirical material, which was subjected to qualitative-quantitative linguistic analysis and described in the case study methodology. The combination of the psychometric method with the case study method facilitated not only to the comparison of results in the subsequent stages of the study, but also allowed to highlight the crucial aspect of the patient's brain recovery process associated with individualization of its course in each patient's case.

The conducted research allowed to accomplish the main research goal and positively verify the hypotheses adopted in the dissertation. The results of linguistic analyzes obtained in subsequent moments of the evaluation revealed significant differences in the picture of linguistic disorders in aphasia over time and with the remission of neurodynamic symptoms. As the results of the research confirmed, in the early recovery phase, even in the case of permanent damage to the speech area due to ischemic stroke, the language skills performance is the result of not only permanent focal brain damage (or focal factors) but also transient biochemical disturbances within the central nervous system (or neurodynamic factors). The latter factors make the image of aphasia in the early stage of recovery variable and often unspecific. Linguistic facts become directly the indicators of the neurodynamic phenomena occurring in the healing brain, manifesting themselves in the form of changes in the syntactic, grammatical, semantic and lexical characteristics as well as phonetic of the evaluated statements and linguistic activities. Although, as the obtained results confirmed, aphasia caused by a stroke located in the speech area is relatively persistent (none of the patients experienced a complete remission of aphasia even after three months), its symptoms change and evolve over time. It affects the process of aphasia diagnosing, which should be also considered in a dynamic aspect. These changes were both quantitative and qualitative. In the course of longitudinal studies, a tendency to decrease the degree of aphasia severity was observed, but also a tendency to change the configuration of dominant symptoms at various stages of the study, which often resulted in several changes in the diagnosis of the aphasia type. The results of research revealed i.a. significant differences in the picture of aphasia and thus in the results of the neurologopedic evaluation, especially between the first examination – carried out on the day when patients were admitted to the stroke unit – and the subsequent moments of the study. These observations allowed to draw certain conclusions for application and organization.
of the diagnostic process, especially in the acute phase of stroke and thereby indicate the first day of hospitalization as the so-called critical moment, and thus exclude it from the process of diagnosing of aphasia. At that time it is only recommended to observe the clinical state of the patient and his linguistic behavior. The picture of aphasia in most cases differed at that time not only in terms of the characteristics and dominant symptoms of linguistic disorders, but also in the degree of severity of these disorders, which were then almost always higher compared to the remaining moments of the assessment. Although the period of three months after the onset of stroke was characterized by the dynamics and variability of aphasia symptoms, the biggest changes were noted above all in the acute period associated with the hospitalization of patients in a stroke unit. Only four out of fifteen patients in each of the designated moments of evaluation showed no change in the type or severity of aphasia, but, what is interesting, in each of them (except for two patients with global aphasia), changes were noted in language structure.

By characterizing the structure and dynamics of language disorders of the examined patients, as part of the case study methodology and in the longitudinal studies, it was possible not only to distinguish permanent symptoms, which are the most serious effect of stroke (aphasic) and temporary, i.e. neurodynamic (pseudoaphasic), but also indication of certain trends and directions of improvement in the area of impaired abilities. Qualitative and quantitative linguistic analyzes of obtained data in longitudinal studies allowed to follow the dynamics of the regression of aphasic disorders and changes in the picture of language difficulties in individual patients due to regression of neurodynamic symptoms and general stabilization of the clinical condition over time. The tendency to improve language skills observed in the course of research revealed itself in the group of patients on the one hand in the form of qualitative changes related to the complete remission of certain symptoms (here: neurodynamic symptoms), as well as the consolidation and further specialization of others (here: focal symptoms), and on the other, in the form of quantitative changes related to the decrease of the severity of disorders, and thus the reduction of various linguistic disintegration symptoms, for example in the form of agramatism, phonetic distortions or neologisms for the implementation of correct (non-disturbed) forms. Importantly, the changes observed in the language structure were most often radical and usually took place overnight, which allows to see the difference between early (especially acute phase – connected with hospitalization) and chronic phase of recovery, in which the changes usually occur gradually and a bit slower (see: Zarębina 1973; Czochra and Klimkowski 1978). The dynamics and direction of changes, most often expressed
in the change of profile and the improvement of language skills observed in subsequent evaluations, were directly reflected in the results of the neurologopedic assessment and in the results of the linguistic analysis. In the case of sensory aphasia, the improvement manifested itself above all at the level of the so-called deep structure, i.e. in the scope of the dictionary and the lexical-semantic system, while in the case of motor aphasia, the changes most often concerned the implementation of the text and the so-called surface structure (see: Zarębina 1973: 103). Their detailed descriptions were included in the analysis of individual case studies, along with the characteristics of changes occurring in individual language subsystems. Due to disturbances of selectivity and general dynamics of nervous processes in the acute phase of stroke, a large share of linguistic behaviors of the type of perseveration was observed, which appeared both at the level of understanding and verbal expression. Neurodynamic character in some patients also had such phenomena as logorrhea, echolalia or embol, which turned out to be typical mainly for the acute period of recovery.

As the results concerned, the observation of the dynamics of linguistic disorders in the course of longitudinal research enables not only the differentiation of symptoms being a permanent and the most serious effect of stroke, but it can also be an important prognostic factor for the further process of recovery and speech restitution. Lack of any improvement during hospitalization may indicate a severe neurological deficit and constitute a negative prognosis in restoring language functions. Due to the fact that obtained results involved small group of patients, conclusions taken from them should be treated as preliminary and verified in the course of further research. It would be significant not only in theoretical, but also practical sense.

Keywords: aphasia, pseudoaphasia, ischemic stroke, neurodynamic factors, early stage of recovery