

Summary

The number of people with neurodegenerative disorders is systematically growing. One of the most common diseases is Alzheimer's disease (AD). This topic was chosen to stress the necessity of diagnosis and speech therapy of patients with dementia of Alzheimer's type. The purpose of this dissertation was to characterize the speech of people in the early stages of Alzheimer's. The main hypothesis is that the disorders observed in AD are a pathological intensification of changes in the speech in normal aging. Twenty four women were examined – eight with dementia of Alzheimer's type from Center of Alzheimer in Warsaw (average age 78,4), eight from the older control group (average age 74,8) and eight from the younger control group (average age 30). The research lasted from April 2016 to April 2017 in the research group and from April to June 2018 in the control groups. Because of the comparison of the performance of tasks between groups, better interpretation which disorders may be a result of Alzheimer's disease and which may be associated with changes in the speech in normal aging was possible.

The first part of the thesis contains major information about Alzheimer's disease: epidemiology, diagnostic criteria, causes, process, types and variants, pharmacological and nonpharmacological treatment. I started the research with the overview of literature covering the topic of changes in speech in normal aging and speech disorders in dementia of Alzheimer's type. Next chapter is about differential diagnosis between Alzheimer's disease and diseases with a similar clinical picture: aphasia, primary progressive aphasia, vascular dementia, frontotemporal dementia, dementia with Lewy bodies, Parkinson's disease, Huntington's disease, schizophrenia, depression. Finally, I compared Polish and foreign scale, tests and batteries which examine cognitive function (to include language), which could be used to diagnose speech disorders in AD.

The second part contains an analysis of my own research. The used methods were interview/conversation, questionnaire and tests (*Mini Mental State Examination*, *Boston Diagnostic Aphasia Examination* and some tasks from the *Lucki's test* – examination of cognitive process after brain injury). Additionally, examination of naming (nouns, verbs, adjectives, adverbs) and fluency (fruits, words started with the letter S) was prepared. On the one hand language material was analyzed according to the structuralist perspective – I have observed changes in phonological, morphological, lexical-semantic and syntactic subsystems. On the other hand typical language skills were examined:

- a) comprehension (indication of pictures, parts of the body, understanding commands, complex lingual material, metaphors, nonsense in images and ability to classify objects),
- b) expression (automatized sequences, repetition of words and sentences, naming pictures, answering the questions, giving antonyms, semantic and phonemic fluency, narration),
- c) reading (basic symbol recognition, word identification, picture-word matching, reading aloud, reading comprehension),
- d) writing (mechanics, for dictation, written picture naming, the sentences, narration).

In the questionnaire for the caregivers they were asked about changes in speech of the patient before and after the period of onset.

The results of the research showed that people with AD had difficulties in remembering the instruction and waiting for doing task until instruction was fully presented. They also chose the literal meanings of metaphors, did not understand the sense of the story and gave unexpected explanation of their choices during classification of the objects. The analysis showed a significant decrease in semantic fluency and slightly decrease in phonemic fluency, problems with naming (omitting, replacing by another word, pronouns, neologism, periphrasis, choosing 'outlying' word during giving antonyms).

There were also noticed many lexical exponents of not knowing or doubts, difficulties in recognizing objects in pictures, numerous pauses, lengthening of vowels in words, repetition of words and sentences, unfinished sentences, digressions, focusing on the details during picture description, difficulties in self-storytelling and lack of coherence. Tasks revealed deficits in creating sentences during written narrative, understanding longer texts, inconsistent use of uppercase and lowercase letters and punctuation. Among the preserved skills were: understanding of short commands, ability

to indicate pictures and body parts, production of automatized sequences, repetition and reading of words and sentences, naming pictures and naming in response to questions, recognition and identification symbols and words, writing mechanics and for dictation.

As expected, in the early stage of dementia of Alzheimer's type the disorder mainly affected lexical-semantic subsystem. However, some deficits in syntactic subsystem were also occurred, especially in written narrative. In spontaneous speech those disorders are masked by the specificity of the syntax of spoken language. Other subsystems are preserved in this stage of AD.

The degree of cognitive impairment had the main impact on the speech disorders. However, it was modified by the level of education and mental activity. Changes in naming, fluency, reading comprehension and written narration observed in the group of healthy elderly people (especially after 80 years of life) were similar to deficits in dementia. For people with AD those problems show faster and are more severe, but their similarity is significant. It allows to think that speech disorders in Alzheimer's disease and those in normal aging are linked.