A MORPHOLOGICALLY BASED SCALE OF ALZHEIMER´S DISEASE STAGES "THE TOMOGRAPHY DEMENTIA RATING SCALE" (TDR)

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Introduction: To identify AD stages, we propose morphologically determined "Tomography Dementia Rating scale (TDR)" based on the determination of dementia stages according to the severity of atrophic changes in the temporal lobes obtained during CT or MRI.

Methods: The research included 81 patients aged 34-79 (average age 67), 28 male (34.57%), 53 female (65.43%), with AD different stages.

All the patients underwent MRI, CT with subsequent calculation of the temporal lobes atrophy degree.

Results: CT and MRI showed that objective brain morphological features characteristic for all patients with AD are atrophic changes in the temporal lobes, which at AD different stages range from 4 to 62%. These data made it possible to set up a scale that allows to identify certain atrophic changes at each disease stage:

- Preclinical AD stage - TDR-0 - temporal lobes atrophy with 4-8% tissue mass decrease.
- Early AD stage - mild dementia - TDR-1 - temporal lobes atrophy with 9-18% tissue mass decrease (corresponds to CDR-1).
- Middle AD stage - mild dementia - TDR-2 - temporal lobes atrophy with 19-32% tissue mass decrease (corresponds to CDR-2).
- Late AD stage - severe dementia - TDR-3 - temporal lobes atrophy with 33-62% tissue mass decrease (corresponds to CDR-3).

Conclusions: The application of morphologically determined AD stages scale - TDR - is an effective method to objectively identify AD stages by means of widespread CT and MRI.