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Certain new aspects of etiology and pathogenesis of Alzheimer ' s disease

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ABSTRACT

The research focuses on the possibility of early detection of AD-specific vascular and atrophic brain changes in families which have a tendency to inherit the disease. The research included three families with AD inheritance. All patients underwent: cognitive function assessment (MMSE), determination of dementia severity (CDR) and AD stages (TDR), computed tomography (CT), magnetic resonance imaging (MRI), scintigraphy of the brain (SG), rheoencephalography (REG), and cerebral multigated angiography (MUGA). All patients with different AD stages, as well as their descendants, have specific atrophic changes in the temporal lobes of the brain. The degree of these changes increases as AD becomes more severe and ranges from 4% - 8% (TDR-0) to 33% - 62% (TDR-3) of the total mass of a healthy person ' s temporal lobes. Simultaneously, the patients examined have changes of microcirculation manifested by reduction of the capillary bed in the temporal and frontalparietal regions, the development of multiple arteriovenous shunts in the same areas, early venous dumping, anomalous expansion of venous trunks that receive blood from the arterialvenous shunts, venous stasis on the frontoparietal boundary. Similar changes are found among AD patients ' descendants aged 8 - 11, the only difference being in the degree of temporal lobes atrophy which is 4.7%. This proves that microcirculatory disorders are primary and atrophic changes of the temporal lobes are secondary in AD development. The data obtained indicate that the examination of AD patients ' relatives should begin well before the possible manifestations of the disease, even in childhood. It will allow to reveal the possibility of inheritance and the signs of the disease at the earliest possible stage and to begin its treatment in time.

KEYWORDS

Alzheimer's Disease; CDR; TDR; Dementia; Vascular Factors in Alzheimer ' s Disease; Dyscirculatory Angiopathy of Alzheimer ' s Type; DAAT; Hippocampus; Temporal Lobes Atrophy

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