



# Diagnosis of Preclinical AD Stage

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**Background:**  
Diagnosis of preclinical AD stage is one of acute problems nowadays. The research was conducted on descendants of patients suffering from AD.

**Methods:**  
14 patients aged 34-48 (mean age 42) were examined, 5 (35.71%) men, 9 (64.29%) women, one of whose parents was diagnosed with AD and one of whose grandparents suffered from mental disorders. Examination included: CDR, MMSE, Tomography Dementia Rating scale (TDR), cerebral CT, MRI, SG, REG, cerebral MUGA.

**Results:**

**The examination revealed:**

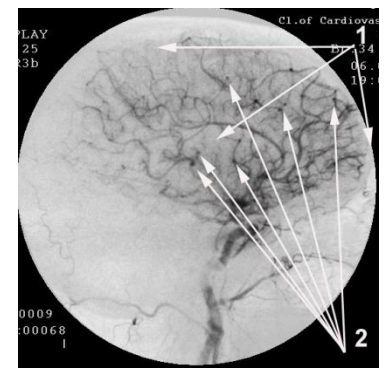
- ❑ memory disorder - 14 (100%) patients;
- ❑ signs of dementia were not detected in any case;
- ❑ cognitive functions decrease to 26-28 MMSE points - 14 (100%);
- ❑ reduced blood flow in the cerebral hemispheres - 14 (100%);
- ❑ decrease in volume pulse blood filling in carotid basins - 12 (85.71%) patients;

**Involuntary changes in the brain were detected in 14 (100%) patients who had:**

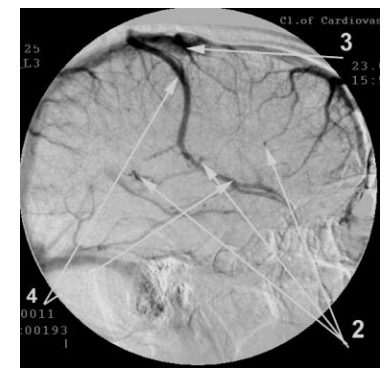
- ❑ widening of the subarachnoid space - 13 (92.86%) patients;
- ❑ 4-8% decrease in the temporal lobes volume - 14 (100%) patients;
- ❑ Sylvian fissures expansion - 14 (100%) patients;
- ❑ initial manifestations of non-occlusive hydracephaly - 4 (28.57%) patients.

**Symptoms of discirculatory angiopathy of Alzheimer's type (DAAT) were detected in 14 (100%) patients who had:**

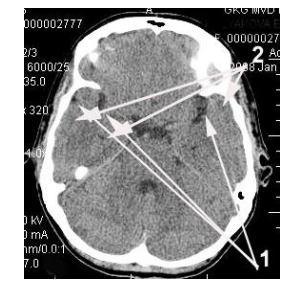
- ❑ reduction of the number of capillaries in temporal and frontal parietal areas – 14 (100%) patients;
- ❑ development of multiple arteriovenous shunts in the basins of arteries supplying blood to temporal and frontal parietal areas - 14 (100%) patients;
- ❑ early venous discharge of arterial blood into the venous bed - 14 (100%) patients;
- ❑ abnormal widening of lateral veins - 12 (85.71%) patients;
- ❑ stagnation of venous blood at the border of the frontal and parietal areas – 11 (78.57%) patients;
- ❑ increased looping of intracerebral arteries - 12 (85.71%) patients.



**Patient P., female, 34 years old, pre-clinical stage TDR-0.** Left internal carotid artery angiogram, arterial phase.  
1. reduction of the number of arterioles and capillaries in the temporal and frontal parietal areas with the formation of hypovascular zones;  
2. multiple arteriovenous shunts.



**Patient G., female, 36 years old, pre-clinical stage TDR-0.** Left internal carotid artery angiogram, venous phase.  
1. multiple arteriovenous shunts;  
2. stagnation of venous blood;  
3. abnormally widened lateral venous branch.



**Patient P., female, 34 years old, pre-clinical stage TDR-0.** CT of the brain .  
1. Sylvian fissures widening signs;  
2. Decrease in temporal lobes volume: left by 3%, right by 4%.



**Patient G., female, 36 years old, pre-clinical stage TDR-0.** CT of the brain .  
2. Decrease in temporal lobes volume: left by 4%, right by 8%.

**Conclusions:**  
The data obtained indicate that in 14 (100%) patients, amid a decrease in memory, there is a decrease in the volume of temporal lobes by 4-8% (TDR-0), as well as discirculatory angiopathy of Alzheimer's type (DAAT), which clearly shows that they have preclinical AD stage.