

Summary

111 alcoholics (66 males, 45 females) without overt clinical signs of brain damage, aged 21-57, were medically and psychiatrically examined and then scanned. 48 age-matched controls were used for CT comparisons. 103 of those patients were tested by means of Wechsler Adult Intelligence Scale, Choynowski's Scale of Memory, Benton's Test, Graham-Kendall's Test, Bender-Gestalt Test, and 61 of these 103 were also tested with Test Battery of Halstead-Reitan and compared with 52 healthy subjects. 15 patients were reinvestigated after $16 \times 5,9$ months and their brain CT and the results of psychological testing were compared. Altogether 25 psychological tests and 29 CT measurements of each brain were taken, including 12 linear measures, 15 brain density values and 2 cerebellum estimations by neuroradiologists.

57,7% of 111 patients had abnormal brain CT, i.e. 2-10 linear measurements and indexes exceeding the value of sum of $X \times 1$ SD (65,2% males, 46,7% females). A sulcal widening was observed in both sexes with preponderance of frontal region. In males there were Sylvian fissure widening and increase of the fourth ventricle dimension, while in females the third and lateral ventricles width were increased, and widening of the interhemispheric fissure was noted. Patients with abnormal brain CT were 4 years older and their alcohol dependence had begun 4 years later in their curriculum than those with normal CT ($p < 0,01$). Cerebellar atrophy of prevalently minor degree was diagnosed in 66,7% of the group, and it was more common in males (73%) than in females (58%).

Follow up CT examinations showed lessening of the sulcal (1 mm) and third ventricle (1,3 mm) widening which was accompanied by improved clinical status. The difference was statistically significant ($p < 0,01$). Cerebellar improvement was also observed.

The deterioration of cognitive functions was recognized in 89% of 61 subjects who filled 11 25 tests, and in 80% of 103 patients by means of classical psychological testing (i.e. without BHR). The worst results were obtained in digit symbol, digit span and picture completion of the Wechsler's Scale and in organic tests. Some differences between males and females emerged.

There were singular and weak correlations between pathological CT measurements and the results of the tests. In the whole group, a calcaral widening has correlated with lower results of category test.

Conclusions

1. Brain CT changes are common in alcoholics without overt clinical signs of the central nervous system damage.
2. They are more common in males but bigger in females.
3. The later development of alcohol dependence causes more psychometric and CT abnormalities.
4. Alcoholism speeds up the process of brain involution.
5. The female brain is more susceptible to neurotoxic effects of alcohol than the male's one.
6. Psychological tests are more efficient and meaningful than CT measurements in the diagnosis of disturbances.
7. The possibility of clinically covert brain damage should be taken into account in the treatment of alcoholic patients.

ANEKS

Wykresy obrazujące zachowanie się wskaźników mózgu w zależności od wieku Ryc. 1. Wskaźnik komorowo-mózgowy (CV1) Ryc. 2. Wskaźnik komorowo-mózgowy (CV2) Ryc. 3. Wskaźnik Evansa (WE) Ryc. 4. Liczba Huckmana (LH) Ryc. 5. Wskaźnik komorowy (WK) Ryc. 6. Wskaźnik Schiersmana (WS) Ryc. 7. Szerokość trzeciej komory (S3) Ryc. 8. Wysokość czwartej komory mózgu (W4) Ryc. 9. Szerokość bruzd kory mózgowej (SB) Ryc. 10. Szerokość szczeliny Sylwiusza (SS) Ryc. 11. Szerokość szczeliny podłużnej (SP)