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Epidemiology and Genetics of Alzheimer's Disease

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Alzheimer's disease (AD) is the most common form of dementia. It is a degenerative and incurable terminal disease. AD accounts for 75% of all forms of dementia all over the world. Its etiology is still unknown. Numerous risk factors of AD have already been discovered. In this paper, some preliminary results are presented. The results suggested that persons with AD often had cardiovascular disease in their history. Conversely, they did not have diabetes mellitus, hypertension and cerebrovascular disease. A relationship between the ApoE4 allele and a higher risk of AD was found (OR 2.52). Among ACE genotypes, the I allele increases the risk of AD, and in this pilot sample, the II genotype showed the OR on the borderline of significance (OR 1.43;95% CI 0.97-2.12).

It is generally accepted that Alzheimer's disease (AD) is the most frequent form of dementia. The etiology of AD is still unknown and three risk factors are hypothesized to be involved indevelopment of the disease (a) vascular risk factors, (b) genetic risk factors and (c) behavioral risk factors [1].

For various reasons, no exact data on the incidence and prevalence of AD are available. There is no compulsory notification, it is difficult to distinguish between different forms of dementia and there is no exact diagnostic test.

Mostly, there are only estimates of the actual incidence or prevalence. Worldwide, there are about 38 million persons with dementia, with 75% of them having AD. In Europe, there are more than 7 million people with dementia, and in the Czech Republic, 120,000 cases of AD are notified [2-4].

Since 2010, an epidemiological study assessing the importance of selected vascular and genetic risk factors has been underway. The aim was to recruit 800 AD cases and 800 controls. In this paper, some preliminary results from analyses of 394 cases and 287 controls are presented.

The diagnostic criteria for selection of subjects were (a) Mini Mental State Examination (MMSE) test score below 24 points (b) slow development of cognitive impairment and (c) other forms of dementia excluded by a CT scan in the group of cases, and (e) MMSE score above 28 and (f) matched gender and age (± 5 years) in the group of controls [5].

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