Abstract

INTRODUCTION: Artificial sweeteners are nowadays inevitable food additives, since they provide necessary food diversity to people suffering from diabetes. Aspartame is the most frequently used artificial sweetener ever and its safety profile is much better than that of saccharin or cyclamate. It received marketing approval in 1973, but only 3 months later aspartame was withdrawn because of allegations based on improperly designed experimental studies dealing with its carcinogen effects on rodent brain. However, extensive studies using the same model did not confirm such suspicions, and aspartame received a second marketing approval.

EPIDEMIOLOGICAL STUDIES: Almost two decades later an epidemiological study found a relationship between aspartame and an increased frequency of brain tumors in humans. However, this study included a short time span of observation, and it did not estimate actual intake of aspartame, which led to loss of validity. Later on no epidemiological studies found correlation between aspartame use and incidence of brain tumors in humans. Up to now the only safety concern about aspartame, which received valid scientific proofs, is pro-seizure action of its excessive intake. In patients with epilepsy, excessive intake of aspartame can decrease the threshold for seizures or prolong them once they appear. However, if the intake is not above the recommended level of 40 mg/kg b.w./day, aspartame is well tolerated even in this subpopulation.

CONCLUSION: Based on detailed analysis of published studies on safety of aspartame, it should not be restricted, but used in recommended amounts.