IMMUNOREACTIVITY IN KAINATE MODEL OF EPILEPSY

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Seizure-related changes in function of the peripheral immune system, especially in its cell component are poorly recognized. In the present study, we examined the effect of seizures induced by intraperitoneal injection of kainate to mice and rats on weight of central and secondary immunological organs and metabolic activity of splenocytes (MTT test). In kainate-injected mice the production of cytokines: interleukin 2 (IL-2) and IL-10 was also estimated. Seventy two hours after kainate administration, the mice and rats showed a marked decrease in the thymus weight by 36% and 50%, respectively, whereas the spleen weight tended to decrease in rats only. Splenocytes of kainate-injected mice and rats showed significant increase in metabolic activity. The ability of splenocytes of kainate-injected mice to produce IL-2 and IL-10 was reduced but only the former effect reached statistical significance. The results suggest a decrease in T helper-cell dependent immunoreactivity and enhanced phagocytic activity of macrophages in kainate-treated rodents.

Key words: kainate model of epilepsy, thymus weight, metabolic activity of splenocytes, cytokines production