



MEETING ABSTRACT

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# Results of a new cognitive method in rats on the Morris water maze used in modeling experimental Alzheimer's disease

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## Background

In Alzheimer's disease (AD) the loss of neurons in the hippocampal CA3 regions is present. In rats treated by sodium azide (NaN<sub>3</sub>) via subcutaneously implanted osmotic minipumps number of CA3 cells were decreased [1]. We developed a new method to produce AD-like dementia using single intracerebrally (ic.) injected NaN<sub>3</sub> in rats.

## Materials and methods

The CA3 neurons were chemically lesioned by intracerebrally administration of NaN<sub>3</sub> in doses of 8 and 16 mg/ml. To examine learning functions Morris maze was used. During acquisition trials animals had to find a black platform within 120 s. We measured the "escape latency"(msec). Detailed histopathology of brain was performed at the termination of the study. Learning function was measured after 7 days of ic. treatment.

## Results

8 and 16 mg/ml doses of NaN<sub>3</sub> significantly decreased escape time in ic. NaN<sub>3</sub> treated rats compared to control animals. Neuronal necrosis, shrunk neurons, neurofibrillary tangle-like structures were seen in hippocampal area, also.

## Conclusions

Decreased learning capability was induced by the ic. injection of 8 mg/ml and 16 mg/ml NaN<sub>3</sub> dose in rats. We proved that with the new method, acut ic. injection of NaN<sub>3</sub> produces comparable level of dementia caused

by 31 days infusion of NaN<sub>3</sub> using implanted osmotic minipumps [2], and it seems to be suitable to produce dementia in rats.

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