The Effect of Intra-CA1 Agmatine Microinjection on Water Maze Learning and Memory in Rat

Rastegar K, Roosta H, Zarifkar A, Rafati A, Moosavi M.

1Shiraz Neuroscience Research Center and Department of Physiology, Shiraz University of Medical Sciences, Shiraz, Iran.

Abstract

BACKGROUND: Reports on agmatine are controversial showing that it may improve memory, it can deteriorate memory and some did not notice any interference with learning and memory. In the present study, the effect of directly intra-CA1 agmatine microinjection on water maze learning and memory has been assessed.

METHODS: The cannuls were implanted in hippocampal CA1 regions of rats in a sterotaxic frame after general anesthesia. After one week recovery period, the animals were assessed in the reference memory version of water maze. Agmatine (1, 10, 100 or 200 μg/0.5 μl) or saline were infused 20 minutes before or immediately after training.

RESULTS: Agmatine-treated rats did not show any significant difference neither in water maze acquisition nor in consolidation task in comparison with control and sham groups.

CONCLUSION: Agmatine does not affect water maze learning and memory.

KEYWORDS: Agmatine; CA1; Hippocampus; Learning; Memory; Rat; Water maze