

Abstract

The goal of this study is to find an optimal dose of cytostatic Temozolomide (TMZ) for Long-Evans strain of rats. This dose should reduce neurogenesis while having a minimal pernicious health side-effects. Temozolomide is newly used to suppress neurogenesis but similarly to any other cytostatic has an effect on all dividing cells in an organism. This can affect health of an animal. Contrary to the mice, there was no systematic attempt to establish optimal dose. In our experiment rats were divided into four groups – one control group and three treatment groups which received different doses of temozolomide (10, 25, 40 mg/kg of TMZ). To detect level of neurogenesis cells were labeled by bromodeoxyuridine. During the experiment blood element counts were assessed, sensorimotoric tests were conducted, and weight increment was monitored. The results indicate that dose of 10mg/kg is adequate as it reduces neurogenesis by 64% compared to the control group and does not significantly differ from higher doses. In this group weight increment is comparable with the control group, while in the higher doses of TMZ weight increment is significantly lower. Effect of myelosuppression is same for all treatment groups.