



keyword

Middle cerebral artery ischemia-reperfusion

Cerebral infarction

Cerebrovascular disease

Neuropathy

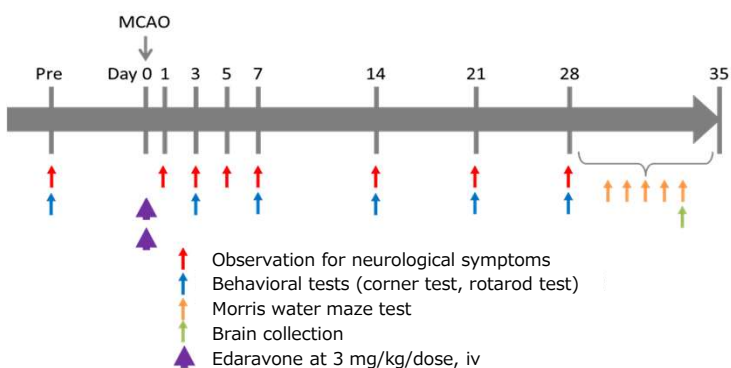
Middle cerebral artery occlusion/reperfusion model in rats

We will introduce the evaluation of chronic cerebral infarction using a middle cerebral artery occlusion/reperfusion model. Using this model, we can evaluate the recovery from neurological symptoms, impaired motor function, and asymmetric features until 28 days after cerebral ischemia. Please feel free to contact us if you have any questions or concerns about the details.

Schedule and Method

Animals used: CrI:CD (SD) rats
Group composition: Sham control (n=8)
Vehicle control (n=12)
Edaravone at 3 mg/kg (n=12)

Test Schedule



MCAO method: Under anesthesia, a plug is inserted from the right internal carotid artery to the right middle cerebral artery to occlude the middle cerebral artery. Animals that had flexion of the forelimbs within 2 hours of the start of occlusion are selected, and reperfusion is performed.

Administration: Edaravone at 3mg/kg is administered intravenously immediately and 30 minutes after reperfusion (twice in total).

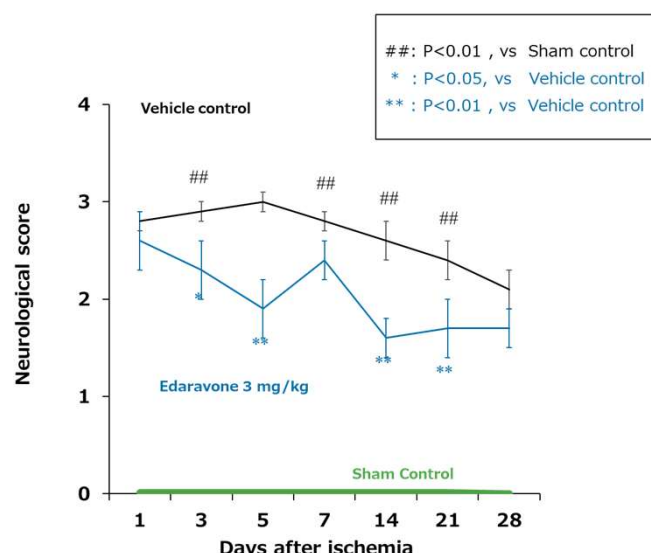
Neurological symptoms and behavioral tests: These are tested between the period from before administration to Day 35.

Calculation of atrophy rate: Brain area is measured using WinROOF, and the atrophy rate is calculated from the measured values.

Results

Neurological deficit assessment scale (Bederson et al.)

Grade 0: No observable deficit.
Grade 1: Flexion of forelimbs when lifted by the tail approximately 1 m above the floor (Grade 1 if no other findings are noted).
Grade 2: Decreased resistance to lateral push without circling.
Grade 3: Decreased resistance to lateral push with circling.
Grade 4: Decreased level of consciousness (ranging from minimal spontaneous movement to coma).
Grade 5: Death (death occurs between administration and assessment of neurological symptoms).



Right-sided MCAO caused left forelimb flexion, symptoms of weak resistance in the left shoulder, and rotational movements.

Please refer to NBR Study Navi No. 74 for evaluation of the middle cerebral artery occlusion/reperfusion model during the acute phase.