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Poster Presentation P4

POST-STROKE BEHAVIORAL DEFICITS IN MICE: TWO MODELS COMPARED

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Stroke is a leading cause of disability worldwide. Though current rehabilitative strategies improve quality of life for patients, they do not promote full functional recovery. Improving rehabilitation requires a better understanding of the mechanisms that underlie stroke injury and recovery; these questions are best explored in animal models. The current study directly compared behavioral outcome in two mouse models of ischemic stroke (vasoconstriction via endothelin-1 (ET-1) and photothrombosis). Sixteen mice were trained preoperatively on a reaching task to establish skilled motor performance. Mice then received ischemic stroke using one of the two methods. All strokes were administered to the forelimb representation area of motor cortex in order to disrupt performance of the previously trained motor skill. Beginning four days after surgery, mice were assessed for reaching proficiency daily for 14 days. Mice receiving photothrombotic lesions broke significantly fewer pasta pieces than mice receiving ET-1 lesion. Our results suggest that photothrombotic lesions result in greater behavioral deficits than ET-1 lesions. One common finding with rodent models of stroke, especially when induced by ET-1, is that animals exhibit spontaneous recovery that complicates interpretations of results. Our data suggest that photothrombotic stroke may be a better model of long-term behavioral deficit that could circumvent some of these issues.