Stroke is the primary cause of physical impairment and third major fatality risk for adults in Canada, but there are still few available therapies for stroke. Axonal rewiring is a natural process which proceeds a stroke, where alternate neural pathways are strengthened to overcome the lesions caused by the stroke. The protein Nogo inhibits this type of recovery, resulting in a more inefficient response to treatment. Inhibiting Nogo could provide to be an effective alternative to existing pharmaceutical treatments. Transgenic mice lacking the Nogo gene were used as a point of comparison to regular mice in order to assess the extent of the effect of the treatment. Mice were pre-trained motor skill tests (ledger tapered beam test and pasta test) to compare initial ability with ability after stroke and recovery, as well as original limb bias. After inducing a localized ischemic stroke to the motor cortex (Endothelin-1 model), half the regular mice and half the transgenic mice were treated with the Nogo-inhibiting drug (ATI355), administered intrathecally, while the untreated transgenic and regular mice were used as a control. Mice repeated the pre-trained motor skill tests. The results indicate ATI355 decreased recovery times, particularly in regular mice. Transgenic mice that received treatment may have had a smaller reduction in recovery time due to the nerve growth factor stimulants in the drug that contribute to neuron rewiring and recovery. Humans cannot be transgenic like mice, therefore understanding the effectiveness of ATI355 is relevant in treating human stroke patients.

Themes:
Check (highlight) the most applicable theme according to the abstract.

Innovation and Technology | Health and Wellness | Culture and Society | Sustainability and Conservation

Comments: Well-written with flow and easy to comprehend. Methods section and model was also well explained. All the best at MURC!