News Release

STUDY FINDS DRUGS THAT CAN REVERSE NERVE DAMAGE

Chronic numbness or pain and tingling caused by diabetes or other conditions may be reversible

(January 17, 2017) People who suffer from chronic numbness or pain and tingling in their extremities, caused by diabetes or other conditions, might soon get relief. A study by an international team of researchers has found that a class of drugs prescribed for other medical issues such as nearsightedness, incontinence or peptic ulcers may also prevent numbness and pain in fingers, arms and legs.

Led by Dr. Paul Fernyhough of the University of Manitoba and St. Boniface Hospital Albrechtsen Research Centre, and Dr. Nigel Calcutt of the University of California at San Diego, the researchers found that antimuscarinic drugs such as atropine or pirenzepine can reverse the numbness and pain, called neuropathy, often experienced by people with diabetes, HIV, or as a side effect of cancer chemotherapy.

Fernyhough notes: “The costs of treating these diseases and associated morbidities exceed the costs for treating breast cancer. For the first time we have identified a new class of drugs that can reverse nerve damage in animal models of these diseases.”

In peripheral neuropathy the nerve endings of the peripheral nerves die leading to severe impacts on quality of life. For example, patients suffer from intractable pain, foot ulcers, infections and ultimately amputations. There are presently no treatments other than palliative care. The study found that widely-used drugs targeted a key receptor in the neural pathway regulating the growth of nerve fibres and stimulated their regeneration. The drugs drive nerve fibre regeneration and repair in disease states such as diabetes and chemotherapy where there is otherwise irreversible nerve damage.

Calcutt, Fernyhough and Lakshmi Kotra of the University of Toronto together have founded the biotech company WinSanTor to specifically develop the therapeutic potential of this novel approach to treating neuropathy. "This data opens the possibility that the process of peripheral nerve degeneration may be therapeutically reversible, and now with the potential to use existing drugs, we can rapidly translate these findings to clinical trials," says Stanley Kim, co-founder and CEO of WinSanTor. “Peripheral neuropathy is a major and often neglected health problem affecting hundreds of millions of people around the world, including a majority of diabetes patients, and we can't afford to wait any longer in advancing treatments for this disease.”

Fernyhough adds: “An exciting aspect of the work is that these are new uses for old drugs. They have been used in humans for over 20 years with no serious side effects and have an excellent safety profile. We expect Phase 1 trials to progress smoothly with Phase 2 trials arranged and already funded for 2017.”

“We are proud of Dr Fernyhough’s exciting finding and the clinical implications of this discovery,” says Dr. Grant Pierce, Executive Director of Research at St Boniface Hospital. “It is another example of the successful history at St Boniface Hospital of translating our lab bench findings into valuable medical applications to benefit the health of Canadians.”

“I congratulate Drs. Fernyhough and Calcutt on their findings,” says Dr. Digvir Jayas, Vice-President (Research and International) and Distinguished Professor at the University of Manitoba. “This research will benefit millions of people who are affected by chronic diseases.”

The results of the study will be published this month in the Journal of Clinical Investigation. The research was funded by grants from the JDRF, the Canadian Institutes of Health Research, and the National Institutes of Health, with support from St. Boniface Hospital Foundation.

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St. Boniface Hospital Foundation *was founded in 1971 and is the primary fundraising organization for St. Boniface Hospital. The Foundation is dedicated to making possible the many innovations in health research and patient care taking place at the Hospital. Research at St. Boniface Hospital is where medical discoveries are made; science is translated into practices that improve human health; and today's best minds are shaping tomorrow's advances in health care.*

The University of Manitoba *– Manitoba's research university – has a tradition of excellence in research, scholarly work and other creative activities spanning over 140 years, having made seminal contributions in many fields and finding life-changing solutions to problems being faced by peoples of Manitoba, Canada, and the world through fundamental and applied research.*

WinSanTor Inc. *is a clinical-stage biotechnology company focused on the discovery and development of treatments for peripheral neuropathies, including diabetic peripheral neuropathy, chemo-induced peripheral neuropathy, HIV-induced and others. WinSanTor was founded by scientists and industry experts who share the vision that recent scientific insights into the biological processes underlying degenerative diseases offer an unprecedented opportunity to discover and develop effective medicines. WinSanTor is rigorously pursuing a science-driven approach to translational medicine and clinical development.*

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