MS® Multiple Sclerosis Society of Canada

Progress Report

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A Message from the President

Yves Savoie

The landscape of MS research is changing – and thanks to you, the MS Society is leading the way. As you'll see in this issue of your **Progress Report**, we are committed to advancing our understanding of progression and speeding up the time it takes for research to become therapies that benefit people with MS.

One excellent example is a study exploring the potential of mensenchymal stem cells and its ability to reduce inflammatory activity in people with MS. Ultimately, our hope is that these investigations can lead to the repair and treatment of nerve tissue.

Another landmark study has identified a biomarker (a measurable indicator of a biological process used as a predictor of health or disease) in some people with primary progressive MS that may lead to effective therapies. This is a ground-breaking advancement in our aggressive pursuit of therapies and treatments for primary progressive MS where none have been available.

Both of these critical endeavors are described in the pages of your **Progress Report**.

In everything we do, our focus is on people and families affected by MS, whose quality of life depends on meaningful treatments and services. With your partnership, we will continue to explore innovative research that will lead us to treatments with all due speed.

I am proud of all we accomplish together, and I am deeply grateful for your support as we seek to end MS.

Warm regards,

Yves Savoie
President and Chief Executive Officer
Multiple Sclerosis Society of Canada

Canadian Clinical Trial Explores Treatment Potential of Mesenchymal Stem Cells

The promising path from stem cell research to therapeutic treatments is taking a major step forward with a landmark study focusing on multiple sclerosis.

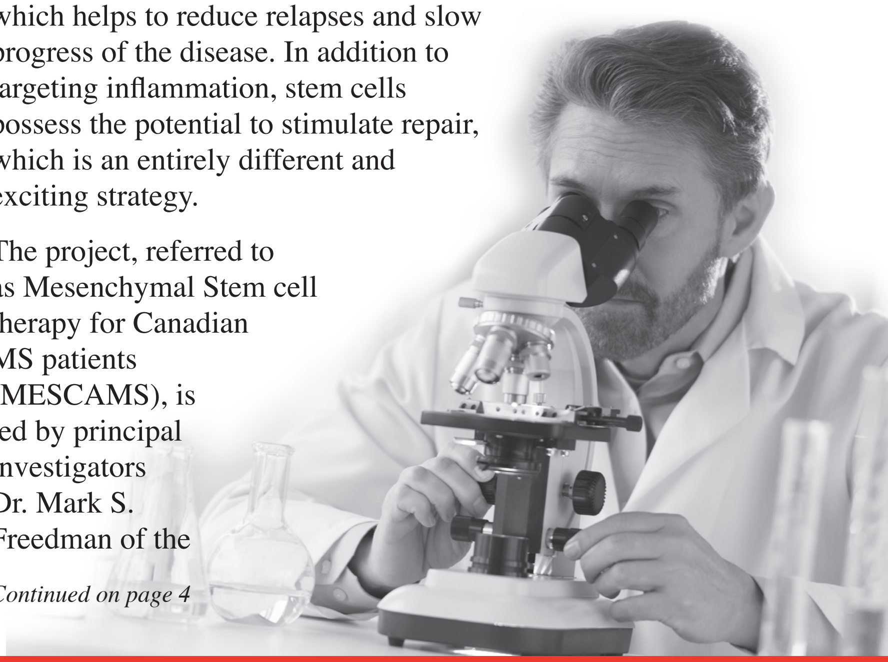
As you might know, stem cells can mature into specialized cells that serve a specific function in the body. They are also able to produce exact copies of themselves. Recently unveiled unique properties of stem cells position them as promising candidates for treatments that can slow MS disease activity and repair tissue damage in the central nervous system.

A new multi-site research investigation, funded by the Multiple Sclerosis Scientific Research Foundation, the government of Manitoba, and A&W Food Services of Canada Inc., seeks to show that mesenchymal stem cell therapy (MSCT) is safe and that it reduces inflammatory activity in people living with MS. In addition, and significantly, it will determine the ability for MSCT to lead to repair of nerve tissue and subsequent recovery of neurological function.

Mesenchymal stem cells can develop into important tissues in the body such as bone and fat, and have shown a capacity to repair nerve cells through mechanisms not yet fully understood. Today, there are no approved stem cell therapies for MS; all therapies currently target the reactive immune system, which helps to reduce relapses and slow progress of the disease. In addition to targeting inflammation, stem cells possess the potential to stimulate repair, which is an entirely different and exciting strategy.

The project, referred to as Mesenchymal Stem cell therapy for Canadian MS patients (MESCAMS), is led by principal investigators Dr. Mark S. Freedman of the

Continued on page 4



MS in the News

MS Society-funded study identifies biomarker in primary progressive MS

An estimated 10 to 15% of people with MS suffer from primary progressive MS (PPMS) characterized by steady progressive deterioration in neurological function without remissions. Yet, immune-directed therapies, which are the mainstay of relapsing-remitting MS treatment, appear to offer little if any benefit to people with PPMS.

That's what makes the result of this study, funded in in part by a collaborative grant from the MS Scientific Research Foundation, potentially groundbreaking.

A research team led by long-time MS Society grantee, Dr. Amit Bar-Or, identified a biomarker (a measure used to quantify progress) that can distinguish certain PPMS patients who may be able to benefit from immune-directed therapies. The work investigated immunoglobulin (Ig) M, an antibody that can be detected using a method called oligoclonal band (OCB) testing. Screening for this antibody shows great promise as a potential tool to detect active inflammatory disease in people with PPMS, which could aid in determining the appropriate treatment for these individuals.

Myelin-repair drug passes phase 1 safety tests

A new study published by Dr. Jonathan Tran and colleagues marks a turning point for MS treatments. The study tested the safety and tolerability of a novel a drug called BIIB033 which works by removing the breaks on the repair of myelin, the protective coating that surrounds nerve fibres, and is also damaged in MS. The hope of myelin repair (or remyelination) is that it holds out promise of restoring lost function in people with MS, and can slow or halt the accumulation of damage, which often leads to severe disability.

Results of the phase I clinical trials demonstrated positive results in terms of the safety and tolerability (ability for the body to process the drug) of BIIB033 at doses up to 100 mg/Kg. There were no serious adverse effects reported. These results pave the way for phase II clinical trials, which are already underway and will provide more information about the treatment capabilities of BIIB033.

The MS Society will be sure to keep you updated on the exciting results of this promising new drug therapy

SPOTLIGHT ON:

MS Society Grantee Dr. Hilda de Jong

Dr. Hilda de Jong
The University of British Columbia

Thanks to you, the MS Society of Canada is able to fund research that is aggressively searching for new treatments and cures for MS. Grantee Dr. Hilda de Jong is searching to improve the variety and availability of drug therapies for people with MS. Her goal? To "improve the health outcomes and quality of life of persons living with MS."

We asked her a few questions about what inspires her – and why her research is important to Canadians living with MS.

How did you become interested in MS research?

At the EndMS Summer School in Vancouver and Halifax, I met people living with multiple sclerosis. Hearing their stories inspired me even more to conduct research on MS in order to improve their health outcomes and quality of life.

Can you describe your research?

There remains a real need for better therapies for the treatment of MS.

Readily available, low cost and orally active pills such as the cholesterol lowering, blood pressure control or stomach acid reduction medications offer potential, but are relatively unexplored options in the treatment of MS.

By using multiple powerful databases, we will study the effects of these cholesterol lowering, blood pressure control or stomach acid reduction medications, alone or in combination with Interferon betas, on the MS disease course. Ultimately we hope to improve treatment options in MS, thereby improving the health outcomes and quality of life of the 100,000 Canadians living with MS.

How do you feel about the donors who support your research?

I am incredibly grateful for all those who make my research studies possible. This is an exciting opportunity to explore whether commonly prescribed medication for conditions such as heart disease or indigestion show any benefit on disease progression in people with MS. Our study findings would be highly novel, and if beneficial, these medications could improve the quality of life of patients living with MS at a relatively low cost.

Listening to People with MS

Canada has the highest rate of MS in the world.

Not only do 100,000 Canadians live with MS, their families, friends and communities live with MS too. We know that the disease can negatively impact quality of life. But how? Where are the gaps in service for people living with MS and their caregiver? How can we break down barriers?

For the last 18 months, the MS Society of Canada has asked those questions of more than 6,000 Canadians affected by MS including people with MS, friends, caregivers, and family members. Here are just a few of the things that we've heard.

What is important for a good quality of life with MS?

- ✓ Access to medical care
- ✓ Support for caregivers
- ✓ Independence
- ✓ Access to financial support
- ✓ Information

Caregivers need more support

72%

don't have the support they feel they need

79%

don't have access to professional help to deal with stress

77%

who require respite care don't have access to it

26%

say that their children under 18 have caregiving responsibilities

> My wife … is the rock of the family. She helps care for me, and I want the government to recognize the vital role she plays in our family… I want better care for my caregiver.

What is the one thing that would MOST improve quality of life for Canadians affected by MS?

FINDING THE CURE.

> Research takes time, I get that...but it's a challenge to exercise patience when you're the one living with this disease. Calls to action give me hope, which is a very powerful thing when you're living with progressive MS.

People with MS and their caregivers report a lower overall quality of life than friends and family

Access to medical care was reported to be the most important quality of life priority.

How the MS Society is responding

- Reviewing processes and strategic directions to best meet the needs of Canadians touched by MS
- Offering locally based programs and service
- Developing a nation-wide information and referral service
- Urging federal, provincial and territorial governments to TAKE ACTION

Spring Events of Note

World MS Day is May 27

MS impacts people around the world, who share the same hopes and dreams. On World MS Day this May 27th, we'll join together to raise awareness of multiple sclerosis and encourage people from all nations to work toward a cure.

Gear Up to Fight MS

Register today for MS Bike and join the 10,000 participants who are cycling to fight MS! Since 1989, cyclists of all ages and fitness levels have joined together to raise money for the MS Society of Canada. To learn more, register, or donate, go to msbike.ca.

On National Volunteer Week, We Celebrate *You!*

National Volunteer Week pays tribute to the millions of Canadian volunteers who graciously donate their time and energy to charitable causes. From April 12-18, 2015, we salute all those who make Canada, and the world, a better place to live.

Not a volunteer yet?
This is the perfect time to join us.

If you haven't volunteered for the MS Society of Canada, this is the perfect time to start. From participating in our MS Walk to fundraising for our Friends & Family Drive and helping out at your local chapter, volunteers are the lifeblood of our organization. We are so very grateful for their help.

Find out more at mssociety.ca/get-involved
Or, if you'd like to get involved with your local MS Chapter, simply contact your division office at 1-800-268-7582.

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Canadian Clinical Trial
Continued from page 1

Ottawa Hospital Research Institute, and Dr. James Marriott of the University of Manitoba. Both researchers and their teams possess the expertise and clinical background to carry out this high-level research and position Canada as a leader in the field.

Beyond the critical issue of participants' safety, MESCAMS will provide clues about the benefits of this treatment for people living with MS, based on early encouraging evidence in animals showing that mesenchymal stem cells can reduce inflammation and potentially promote repair.

One of nine parallel independent international studies, this Canadian trial will engage 40 participants over a 48-month period involving the treatment and follow-up. Stem cells will be collected from each participant, multiplied in the lab, and then administered to the participants via intravenous infusion. Because each person receives their own stem cells – a process referred to as autologous transplantation – there is minimal risk of rejection from the procedure. Dr. Freedman says it is not thought that the stem cells of patients with MS are affected by the disease. "By using autologous cells we are tapping into the body's own ability to generate repair, and should have no immunological issues," Dr. Freedman said.

Researchers will examine outcomes from the Canadian population, but will also pool the results from an expected 160 international participants overall. By leveraging knowledge and data, the international research groups will attain statistically relevant conclusions regarding the safety and benefit of the novel treatment for MS.

Such innovative studies would not be possible without the support of dedicated friends who are determined to help bring an end to multiple sclerosis. Only with this commitment will we chart new pathways, develop treatments that improve the quality of life for people living with MS, and one day discover a cure.