Weill Cornell Medicine-Qatar

WCM-Q researcher has new MS test in his sights

Doha – October 19, 2016: Researchers at Weill Cornell Medicine-Qatar (WCM-Q) and the Neurosciences Institute at HMC have won a prestigious international funding award for their highly innovative proposal to use eye examinations to aid in early diagnosis, analysis of disease progression and benefits of treatment in patients with Multiple Sclerosis.

WCM-Q Professor of Medicine Dr. Rayaz Malik was presented with the award for Multiple Sclerosis Innovation (GMSI) by the European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS). It was one of only four research grants awarded from a total of 260 applications from 45 countries and the first ever to be awarded to the MENA region.

MS is a debilitating disease of the central nervous system in which nerve impulses within the brain, and between the brain and other parts of the body, are disrupted. Symptoms include difficulty walking, vision problems, fatigue, pain and cognitive changes.

MS is difficult to monitor as each patient is affected in different ways and experience different rates of disease progression. Additionally, the most widely used monitoring technique, MRI (magnetic resonance imaging) scans of the brain, cannot accurately identify nerve damage, which is the underlying pathology associated with progressive neurological deficits.

Dr. Malik and his team of other WCM-Q researchers and neurologists from Hamad Medical Corporation (HMC), Dr. Saadat Kamran, Senior Consultant Neurologist, and Dr. Ashfaq Shuaib, Professor of Medicine and Neurology and Director of the Neuroscience Institute, believe their technique could provide a more accurate and easier method for monitoring MS, giving doctors a valuable tool to both diagnose the disease earlier and treat it more effectively.

Dr. Malik said: “MS is an extremely distressing disease, which is very difficult to monitor and has limited treatment options. Indeed, a major issue is the lack of approval of new promising drugs as many clinical trials have failed due to an inability to show a benefit. Therefore, there is an urgent need for a new monitoring tool that is both reliable and more accurate that could be applied both in the clinic and in clinical trials. Our research indicates that nerve damage in the cornea is a reliable indicator of nerve damage in the brain that characterizes MS.

“The great advantage of this method is that the eye is an extremely accessible part of the body that is relatively easy to examine, while the brain is very inaccessible and difficult to examine.”

The cornea, the transparent front part of the eye that covers the iris, pupil and the anterior chamber, has the densest concentration of nerve fibers anywhere in the body. Dr. Malik and colleagues have pioneered the technique of ‘Corneal Confocal Microscopy’ (CCM) over the last 15 years to enable close examination and imaging of the cornea’s nerve fibers to identify nerve damage in a variety of conditions including diabetic neuropathy, hereditary neuropathies and in patients with Parkinson’s disease. Contrary to dogma that MS is a demyelinating disease which primarily affects the brain, the team of

researchers at WCM-Q (including Dr. Ioannis Petropoulos) and HMC pursued the idea that CCM could detect nerve damage in patients with MS. To their surprise they found marked nerve fiber loss even in patients with mild deficits.

Importantly, the new test is non-invasive and utilizes existing ophthalmic equipment that many hospitals already have.

The research team will now use the grant to conduct a comprehensive 24-month study to determine whether Corneal Confocal Microscopy can be a viable method for determining nerve damage in patients with MS. The official title of the project is 'Corneal Confocal Microscopy: A Rapid Non invasive Surrogate Endpoint for Axonal Loss and Repair in Multiple Sclerosis'.

The research has local significance as Qatar appears to have a higher than expected prevalence of MS.

Dr. Malik said: "We are extremely grateful to GMSI and very pleased to receive this grant, especially as it is the first time that such an award has been made in the MENA region. We believe our research is truly translational and is an example of the benefits of close collaborations between WCM-Q and HMC to directly benefit doctors and, most importantly, our patients. CCM will not only help in diagnosing and assessing progression, but will also expedite the approval of new treatments for this debilitating condition".

"I am very grateful for the support I have received via the Biomedical Research Program of WCM-Q, which is funded by Qatar Foundation, as it provided the foundations for applying and securing this international grant."

Dr. Khaled Machaca, Associate Dean for Research at WCM-Q, said: "We are extremely gratified that this wonderful research has gained global recognition, not only for Dr. Malik and WCM-Q but also for our partners at Hamad Medical Corporation and for Qatar as a whole.

"It is particularly pleasing that the research has such great potential for translation from the laboratory to the bedside where it could be of immense benefit to patients both in the Gulf and all over the world, as well as helping researchers to develop novel therapies more effectively. Indeed, this funding validates Qatar Foundation's vision to support research infrastructure leading to such translational projects that will ultimately benefit the patient population in Qatar."

Dr. Ashfaq Shuaib of HMC said: "We at HMC are extremely pleased to be involved in this important research with our colleagues at WCM-Q, and this award gives us all a great opportunity to continue to work together to develop a very effective new tool for diagnosing and assessing progression of MS."

- Ends -

Photos Captions:

Photo 1: Dr. Rayaz Malik of Weill Cornell Medicine-Qatar is pioneering research to monitor Multiple Sclerosis by examining the nerve fibers in the eye.

Photo 2: Researchers at Weill Cornell Medicine-Qatar and Hamad Medical Corporation are working together to develop an innovative monitoring tool for MS.

Photo 3: The cornea, the transparent front part of the eye, has the densest concentration of nerve fibers anywhere in the body.

Photo 4: Dr. Rayaz Malik of Weill Cornell Medicine-Qatar, right, is pioneering research to monitor Multiple Sclerosis by examining the nerve fibers in the eye.

About Weill Cornell Medicine - Qatar

Weill Cornell Medicine - Qatar is a partnership between Cornell University and Qatar Foundation. It offers a comprehensive six-year medical program leading to the Cornell University M.D. degree with teaching by Cornell and Weill Cornell faculty and by physicians at Hamad Medical Corporation (HMC) and Aspetar Orthopedic and Sports Medicine Hospital who hold Weill Cornell appointments. Through its biomedical research program, WCM-Q is building a sustainable research community in Qatar while advancing basic science and clinical research. Through its medical college, WCM-Q seeks to provide the finest education possible for medical students, to improve health care both now and for future generations, and to provide high quality health care to the Qatari population.

For more info, please contact:

Hanan Lakkis
Media Relations Manager
Weill Cornell Medicine - Qatar
Mobile: +974 55536564
Direct Line: +974 44928661
hyl2004@qatar-med.cornell.edu