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Toshiba Unveils Partnership With VUmc to Support Dementia Research

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Toshiba has unveiled a ground-breaking scientific co-operation with one of the world's leading centres for research into dementia and neuro-degenerative conditions.

The partnership with the Department of Radiology and the Department of neurology at the VU medisch centrum (VUmc) in Amsterdam will see Toshiba provide its latest MR system, the Titan 3T with pianissimo technology, for the next five years to support research into Dementia and Alzheimer's disease.

Magnetic Resonance Imaging (MRI) techniques have become of paramount importance in recent years in the investigation of the development of dementia. However, the unique MR angiography techniques developed by Toshiba - combined with the features of the quiet and patient-friendly Titan 3T – could prove pivotal in the advancement of research in this field.

Not only does the equipment allow the visualization of the cerebral microvasculature at a clinical MR field-strength, these techniques are contrast-free and can be added to the protocol of longitudinal dementia studies where patients are scanned repeatedly over many years to study the onset and progression of the disease.

Rise in Cases of Dementia
The scientific co-operation with VUmc comes at a time that healthcare and financial systems are braced for a dramatic rise in the number of patients with dementia. Data shows there are now some 36 million people worldwide living with dementia, with that figure expected to rise by 16.15 million a year between now and 2050, underlining the significance of the research and the importance of the Toshiba MR technology within that.

The Toshiba equipment will be installed at VUmc at the beginning of May with the research overseen by Head of Neurology Professor Philip Scheltens and Head of Neuroradiology Professor Frederik Barkhof.

In the hands of the two renowned medical scientists, the Toshiba technology will be tested and refined to improve the care and diagnosis of patients with neuro-vascular and neuro-degenerative diseases such as Alzheimer's.

Professor Scheltens, who is head of the VUmc Alzheimer Center, said: "MR imaging is the cornerstone of dementia diagnosis and working with Toshiba will enable us to dig deeper into the brains of demented people at the earliest stage and discover important clues that ultimately will improve management of these patients."

VUmc research will focus on better understanding of the role of perfusion and vascular changes in dementia and help gain new knowledge in structural aspects of dementia, notably Alzheimer's disease.

Professor Scheltens said the Titan 3T will be a significant tool in helping them achieve that.

Professor Barkhof , who is a senior consultant of the Alzheimer Center and the Director of the Image Analysis Center, explained that MRI is a critical tool in helping show loss of brain volume in relevant structures, such as the hippocampus, in Alzheimer's disease and their research in this area will help in obtaining more sensitive markers to diagnose Alzheimer's and the role of vascular co-morbidity in dementia.

Imaging markers of dementia can be used for early diagnostics but also to assess disease progression and response to therapy.

In the investigation of the development of dementia the high contrast between different soft tissue compartments achieved with MRI, especially at 3T field strength, allows precise anatomical information on brain structures to be derived. It also helps detect patterns of differences between healthy subjects and patients affected with different forms of dementia.

A key advantage of the new Toshiba system is that it is wide bore and has been designed to offer the maximum comfort to the most fragile and elderly patients.

With the unique pianissimo technology, the 3T system is quiet and safe for a patient to be scanned for a continuous period of time using the most gradient demanding sequences.

"The very low noise level will enhance acceptance of MRI in this very old and fragile population and the new Toshiba sequences will allow us to

study the vascular pathology in dementia in more detail," said Professor Barkhof.

Throughout the study, the VUmc researchers expect to scan hundreds of patients with suspected dementia from its memory clinic, which is the largest in The Netherlands and screens 15-20 new patients a week.

Professor Barkhof said the scientific co-operation with Toshiba will allow his team to focus on dementia using "patient-friendly equipment" in a "technically-advanced manner."

He added: "As an academic centre we continuously strive to improve the care for our delicate patients. Toshiba's Titan 3T Pianissimo scanner will allow us to better address the needs of vulnerable patient groups, including those less-oriented ones with cognitive decline and dementia, but also children with neurological diseases such as leukodystrophies."

Mr Alain Bertinatti, Toshiba senior manager (MRI Business Group), said he was delighted to be working with VUmc as a strong partner with MR experience in imaging dementia and research on neuro-degenerative diseases.

The scientific co-operation, he added, will help evaluate the Titan T3 and further improve the MR angiography techniques.

"As a medical imaging industry, Toshiba is dedicated to the development of new technologies that help improve the healthcare and the lives of all people," said Mr Bertinatti.

"With the dramatically growing socio-economic burden of dementia it is crucial for us to develop partnerships with leading institutions to help stop, or at least slow down, the advance of dementia."

For more information, please visit: www.toshibamedicalsystems.com

Published on : Sat, 9 Mar 2013