

**EMBARGOED UNTIL 23.30HRS UK TIME ON TUESDAY 11 JULY**

## **ALZHEIMER'S BIOMARKERS EXPERTS SET THE PACE**

Geneva, July 11<sup>th</sup> 2017 – Diagnosing Alzheimer's disease is today a much more accurate exercise than it used to be just 5 or 10 years ago. Back then, the dementia specialist making a diagnosis of Alzheimer's disease was wrong in 1 out of every 3 patients even when memory deficit was consolidated and already disabling. Today, with the use of biomarkers (i.e. disease signatures based on hippocampal atrophy on MRI; cortical hypo-metabolism, amyloid deposition and tau deposition on PET; and abnormal amyloid and tau on lumbar puncture), specialists can diagnose Alzheimer's with an accuracy approaching 100% up to 5 years earlier than without biomarkers. However, Alzheimer's biomarkers are not reimbursed by payers and are used in an erratic fashion even in academic memory clinic. The net result to patients is a reduced quality of care and lower chance of receiving the most appropriate therapeutic workup.

European Alzheimer's biomarkers experts believe that a large part of the responsibility is due to the lack of coordination among research groups working on biomarker development and validation. Fifty of them, including a bunch of young promising scientists, have joined forces and met in Geneva in 2014 to agree on an agenda of research questions that need to be addressed in order to accelerate the transition of biomarkers from research to daily clinical routine. "The questions have been formulated in the context of a framework borrowed from oncology, reminiscent of that in use for drug development for over 50 years" says Giovanni Frisoni, neurologist and director of the memory clinic at University Hospitals in Geneva, Switzerland, who has led the group.

The massive literature search had been published earlier this year in a series of 9 scientific papers in *Neurobiology of Aging*. The research agenda (aka Geneva roadmap) has appeared today in *The Lancet Neurology*.

"We trust that funders of scientific research such as the European Joint Programming for Neurodegenerative Diseases and Innovative Medicine Initiative will uptake the roadmap and use it to inform calls for Alzheimer's biomarker development and validation" said Bengt Winblad, professor of Geriatric Medicine at Karolinska Institutet in Stockholm, Sweden, and co-leader of the group. "Earlier and more accurate diagnosis is not a sterile diagnostic exercise, concludes Professor Frisoni, it is the cornerstone of treatment with the drugs that will delay the progression of neurodegeneration that are under development and may be on the market in the next few years".

### **About Alzheimer's disease and dementia**

Alzheimer's disease is a progressive degenerative disease which causes loss of neurons in the brain. The symptoms eventually and inevitably manifest as Alzheimer's dementia which impacts cognition, function and behaviour, become progressively worse over time and cannot be reversed. There are 7.7 million new cases of dementia globally each year,

suggesting one new case every four seconds. There were an estimated 44.4 million people with dementia in 2013 and this number is estimated to increase to 135.5 million by 2050. Contemporary criteria for AD dementia incorporate biomarker evidence for of Alzheimer's pathology, including imaging (magnetic resonance imaging measures of atrophy; 18F-fluorodeoxyglucose-positron emission tomography measures of cerebral hypometabolism; amyloid PET measures of fibrillar  $\beta$ -amyloid deposition) and cerebrospinal fluid (decreased levels of  $\beta$ -amyloid, increased levels of tau and phospho-tau). Currently approved treatments may temporarily stabilize or slow the worsening of symptoms, but do not alter the course of the disease.

### **About the Geneva Roadmap**

An effort funded by the Swiss National Science Foundation and private donors. The initial workshop took place in Geneva on December 8-9 2014. Participants were representatives of patient advocates, bioethicists, regulatory agencies, and early career researchers: Giovanni B Frisoni (Geneva, Switzerland), Marina Boccardi (Geneva, Switzerland), Frederik Barkhof (Amsterdam, The Netherlands), Kaj Blennow (Gothenburg, Sweden), Stefano Cappa (Brescia, Italy), Konstantinos Chiotis (Stockholm, Sweden), Jean-Francois Démonet (Lausanne, Switzerland), Valentina Garibotto (Geneva, Switzerland), Panteleimon Giannakopoulos (Geneva, Switzerland), Anton Gietl (Zurich, Switzerland), Oskar Hansson (Lund, Sweden), Karl Herholz (Manchester, United Kingdom), Clifford R Jack Jr (Rochester, Minnesota), Flavio Nobili (Genova, Italy), Agneta Nordberg (Stockholm, Sweden), Heather M Snyder (Chicago, Illinois), Mara Ten Kate (Amsterdam, The Netherlands), Andrea Varrone (Stockholm, Sweden), Emiliano Albanese (Geneva, Switzerland), Stefanie Becker (Yverdon-les-Bains, Switzerland), Patrick Bossuyt (Amsterdam, The Netherlands), Maria C Carrillo (Chicago, Illinois), Chiara Cerami (Milano, Italy), Bruno Dubois (Paris, France), Valentina Gallo (London, United Kingdom), Ezio Jacobini (Geneva, Switzerland), Gabriel Gold (Geneva, Switzerland), Samia Hurst (Geneva, Switzerland), Anders Lönneborg (Lund, Sweden), Karl-Olof Lovblad (Geneva, Switzerland), Niklas Mattsson (Lund, Sweden), José-Luis Molinuevo (Barcelona, Spain), Andreas U Monsch (Basel, Switzerland), Urs Mosimann (Basel, Switzerland), Alessandro Padovani (Brescia, Italy), Agnese Picco (Geneva, Switzerland), Corinna Porteri (Brescia, Italy), Osman Ratib (Geneva, Switzerland), Laure Saint-Aubert (Stockholm, Sweden), Charles Scerri (Msidas, Malta), Philip Scheltens (Amsterdam, The Netherlands), Jonathan M Schott (London, United Kingdom), Ida Sonni (Stanford, California), Stefan Teipel (Rostok, Germany), Paolo Vineis (London, United Kingdom), Pieter Jelle Visser (Amsterdam, The Netherlands), Yutaka Yasui (Memphis, Tennessee), Bengt Winblad (Stockholm, Sweden).

Some of the participants represented scientific societies and groups: European Society of Neuroradiology, Federation of European Societies of Neuropsychology, European Neurological Society of Neuroradiology, International Foundation of Clinical Chemistry and Laboratory Medicine, European Association of Nuclear Medicine, and Swiss Federation of Clinical Neuro Societies.