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Identification of blood biomarkers associated to MCI conversion into AD – The PharmaCog cohort

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Alzheimer's disease (AD) is diagnosed at a stage where neuronal loss is important, leading to severe cognitive deficits. Yet it is difficult to diagnose because of confounding clinical manifestations similar in other dementias. Clinicians thus resort to the longitudinal neurologic observation of disease progression, associated with biological markers such as Aβ 1-42, t-tau and p-tau CSF level and the measure of associated neuroanatomical insults using neuroimaging. Mild cognitive impairment (MCI) precedes AD, but is also present during normal or pathological ageing associated with other dementias. Over the course of 5 years, 50 to 70% of MCI patients will develop AD. ICDD is interested in the identification of prodromal markers of AD associated with disease progression. ICDD is a partner of the IMI/PharmaCog, consortium dedicated to the identification of new tools needed to define more precisely the potential of a drug candidate, reduce the development time of new medicines and thus accelerate the approvals of promising new medicines. For this purpose, specific and robust biological markers are needed to follow disease progression and its potential reversal by disease-modifying drugs. Our efforts are focused on the validation of a novel set of inflammatory blood markers within a cohort of 150 patients followed longitudinally for 3 years. An overview of the validation stage of existing blood biomarkers is presented, with a particular focus on inflammation markers. We will also present the two discovery platforms used to generate the marker sets being validated in the PharmaCog consortium using proprietary cellulomic and proteomic technologies.

Biography

After an initial Engineering degree, Nathalie Compagnone has completed her Ph.D. from the Franche-Comté University and postdoctoral studies from UCSF School of Medicine. She was principal investigator and member of the Brain And Spinal Injury Center at UCSF before joining the pharmaceutical industry in 2004. She directed the Huntington pre-clinical program for Trophos-SA and started ICDD in 2007 with the mission to develop facilitating tools for the pharmaceutical industry to develop better and safer drugs in neurodegenerative diseases. She authored 25 peer-reviewed publications and several patents. She serves as Ad-Hoc reviewer for the NIH and the European Commission for R&D.

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