ITALIAN NETWORK FOR AUTOSOMAL DOMINANT ALZHEIMER'S DISEASE AND FRONTOTEMPORAL LOBAR DEGENERATION (ITALIANDIAFN)

Martina Bocchetta, Michela Pievani, Claudio Babiloni, Amalia C. Bruni, Elio Scarpini, Sandro Sorbi, Fabrizio Tagliavini, Alessandro Padovani, Luisa Benussi, Livia Bernardi, Giuliano Binetti, Barbara Borroni, Giuseppe Di Fede, Emilio Di Maria, Silvia Fostinelli, Daniela Galimberti, Massimo Gennarelli, Roberta Ghidoni, Nicola Marzano, Anna Mega, Benedetta Nacmias, Irene Piaceri, Corinna Porteri, Giacomina Rossi, Silvia Suardi, Fabrizio Vecchio, Giovanni B. Frisoni

Background

The ItalianDIAfN project aims at laying the foundations for an Italian network of centres of excellence with the capabilities to recruit and assess families carrying mutations linked to familial Alzheimer's disease (fAD) or frontotemporal lobar degeneration (fFTLD). The first phase of the project aimed to define standard protocols for the recruitment and data collection of families with fAD and fFTLD.

Methods

A survey of local protocols for patients recruitment (including genetic counselling) and data collection (including clinical, neuropsychological, neuroimaging, molecular imaging, biological and neurophysiological assessment) was conducted. The major international protocols for the biomarkers assessment of fAD and fFTLD were also surveyed. Differences and commonalities among protocols were identified and discussed among ItalianDIAfN partners to reach consensus.

Results

The ItalianDIAfN network converged on a standard protocol for genetic counselling of patients with clinically diagnosed AD/FTLD and/or their at-risk-relatives. Genetic counselling will be provided by a multidisciplinary team, including a geneticist, a psychologist/psychiatrist, and a neurologist/geriatrician, according to the following schedule (Figure, left panel): (i) supportive and informational consultations; (ii) clinical, cognitive and personality assessment; (iii) genetic testing if appropriate; (iv) genetic status disclosure (for those who wish to know); (v) follow-up supportive consultations. A decision tree was developed to assist in the search of the mutation: for cases with abnormal CSF Aβ levels, AD mutations will be searched first; for cases with normal CSF values or data not available, the search for the mutation will be guided by the clinical phenotype first and the age at onset secondly (Figure, central panel). For the data collection, the ItalianDIAfN network converged on disease-specific, internationally compliant protocols as detailed in the Table.

Conclusions

A standard protocol for the assessment and the genetic counselling of fAD and fFTLD cases was defined. These protocols will now be validated on subjects from 12 families with a known pathogenic mutation for fAD or fFTLD (Figure, right panel). The procedures will be disseminated to reach academia, medical societies, and the public at large. The project will contribute to the most innovative initiatives under way in this field by increasing the pool of subjects for disease modifiers trials.