



Conversion rates to dementia of different MCI clinical presentations in a cohort from the Republic of San Marino: a pilot study.

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Background

Mild cognitive impairment (MCI) is a transitional stage between normal aging and early dementia. The principal cognitive impairment can be amnesic, single non-memory domain or involving multiple cognitive domains. Four MCI subtypes (clinical presentations) have been proposed: amnesic single-domain MCI, amnesic multiple-domain MCI, non-amnesic single-domain MCI and non-amnesic multiple-domain MCI. Identifying individuals with MCI at high risk of conversion to AD is of great importance to clinicians, the individuals, and their families.

San Marino has a small population (30,000 c.a. residents), a low number of residents per GP and a very high life expectancy. These features make it a fit platform for the investigation of long-lasting health conditions, such as Alzheimer's disease and dementia.

What we want to find out and how we plan to do it

Our aims are:

- to assess the relative prevalence of different MCI subtypes in a cohort of people from the Republic of San Marino using an extensive battery of neuropsychological tests aimed at evaluating attention, executive functions, memory, language and visuo-constructive abilities.
- to evaluate their conversion rate into dementia within 1 year with neurological and neuropsychological follow-up assessments.
- to develop a cheap and non-invasive screening method for the prognosis of MCI converting in dementia, based on electroencephalography.

So far we have...

We included 274 consecutive patients (127 males and 147 females; mean age 75,74±7,90; mean education 6,02±3,44) with neurocognitive disorders referring to the Neurological Unit of the local hospital.

Eighty-nine (32,48%) of the 274 patients with neurocognitive disorder were diagnosed as demented and 185 (67,52%) as MCI.

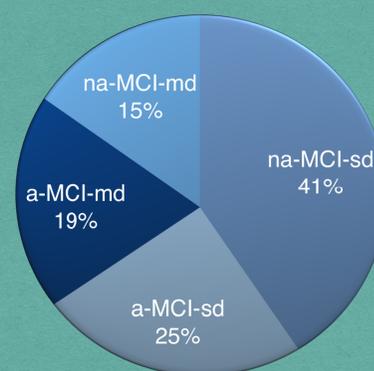
Among the patients with MCI 75 (40,54%) were diagnosed as na-MCI-sd, 46 (24,86%) as a-MCI-sd, 36 (19,46%) as a-MCI-md and 28 (15,14%) as na-MCI-md.

Forty-eight MCI patients were followed over 1 year to monitor for conversion to dementia, 7/13 a-MCI-md (53,84%), 4/12 na-MCI-md (33,33%), 2/10 a-MCI-sd (20%) and 2/21 (9,52%) na-MCI-sd subjects converted to dementia.

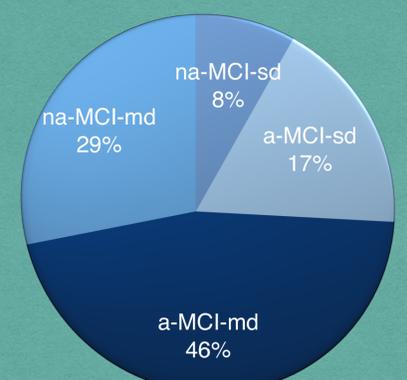
The conversion rates at the 1-year follow-up confirm that the a-MCI-md presentation is the most likely to convert into dementia, consistently with previous literature [3].

These data provide the main platform for the AlzSM, a coordinated effort between San Marino, UK and Germany (Technische Universität München), aimed at developing a cheap, non-invasive screening method for the prognosis of MCI converting in dementia, based on electroencephalography.

● na-MCI-sd ● a-MCI-sd ● a-MCI-md ● na-MCI-md



Prevalence of different MCI clinical presentation



Conversion rate to dementia (1-y follow-up)

na-MCI-sd=single-domain non-amnesic MCI; a-MCI-sd=single-domain amnesic MCI; a-MCI-md=multiple-domain amnesic MCI; na-MCI-md=multiple domain non-amnesic MCI.