Two-year progression from mild cognitive impairment to dementia: To what extent do different definitions agree?

Presentation by Will Saxena, MD:


This study looked at the term “mild cognitive impairment” (MCI) and examined if it had a uniform and uniformly applicable definition as a precursor of a more advanced cognitive impaired state, i.e. dementia.

Purpose: The purpose of the study was to determine the 2-year outcome from 16 different current classifications of mild cognitive impairment in a population-based sample.

Methods: The study design included a prospective large-scale multicenter cohort study conducted in United Kingdom with baseline and 2-year follow-up phases. Participants included thirteen thousand four individuals aged 65 and older from the Medical Research Council Cognitive Function and Ageing Study. From this, a sub sample of 2,640 individuals was selected and completed a more-detailed cognitive assessment. Individuals who underwent further assessment were asked to complete annual or 2-year follow-ups. Information on sociodemographic status, general health, cognitive impairment and functional ability were collected using a structured interview. Individuals were classified according to 16 different definitions of MCI. These were applied retrospectively.

Results: The dominant outcome across definitions was an impairment that was not classifiable or reversion to normality. Progression to dementia was variable and generally poor. Overall progression was highest in classifications in which impairment extended to memory and non-memory domains. Predictability was age dependent in some but not all classifications.

Conclusions: The authors conclude that current classifications of MCI have variable outcomes in population-based samples. Progression to dementia is relatively rare and is dependent on age and definition. Selection criteria developed for the clinic are based on a "high risk" approach that leads to exclusion of a large percentage of the impaired population who are neither normal nor demented and for whom no intervention options are currently available. A refined definition of this construct is urgently needed if MCI is to be used to predict dementia in population-based studies.
Independence in daily living is a major concern for aging individuals and society

Presentation by Kevin Glenn, MD:

Independence in daily living is a major concern for aging individuals and society. An increased survival rate impacts ones independence in daily living.

Purpose: The purpose of this study was to assess the loss of physical and cognitive independence in a Danish cohort aged 92 to 100 years.

Methods: Subjects were initially contacted in 1998 when 3,600 persons were in the cohort and followed and contacted in 2000, 2003, and 2005. For this study, 2,262 persons participated. Multiple functional outcomes, the Mini Mental State Examination (MMSE), and depression symptomatology data were collected.

Results: The 1905 cohort had only a modest decline in the proportion of independent individuals at the 4 assessments between age 92 and 100 years: 39%, 36%, 32%, and 33%, with a difference between first and last assessment of 6%. The prevalence of independence was reduced by more than a factor of 2, from 70% in 1998 to 33% in 2005 (difference, 37%; 95% CI, 28–46%) for the persons who survived until 2005. Similar results were obtained for the other functional outcomes.

Conclusions: For the individual, long life brings an increasing risk of loss of independence.
Effect of physical activity on cognitive function in older adults at risk for Alzheimer Disease


Research has shown that physical activity reduces the risk of cognitive decline; however, evidence from randomized trials is lacking. Thus, this study was conducted as a randomized control trial.

Purpose: The purpose of this study was to determine whether physical activity reduces the rate of cognitive decline among older adults at risk.

Methods: This trial was conducted in Perth, Western Australia between the years 2004 and 2007. The randomized controlled trial lasted 24-weeks and a physical activity intervention was conducted. Volunteers who reported memory problems but did not meet criteria for dementia were recruited for the study. Three hundred eleven individuals aged 50 years or older were screened for eligibility, 89 were not eligible, and 52 refused to participate. At completion of the 18-month study, 138 participants finished with 170 enrolled. Participants were randomly allocated to one of two groups: 1) an education and usual care group or 2) to a 24-week home-based program of physical activity. Data were collected from the Change in Alzheimer Disease Assessment Scale-Cognitive Subscale (ADAS-Cog) scores (possible range, 0-70) over 18 months. An intent-to-treat analysis was conducted.

Results: Participants in the intervention group improved 0.26 points (95% confidence interval, -0.89 to 0.54) and those in the usual care group deteriorated 1.04 points (95% confidence interval, 0.32 to 1.82) on the ADAS-Cog at the end of the intervention. At 18 months, participants in the intervention group improved 0.73 points (95% confidence interval, -1.27 to 0.03) on the ADAS-Cog, and those in the usual care group improved 0.04 points (95% confidence interval, -0.46 to 0.88).
Presenters:
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Janet Specht, PhD

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