ARIC Neurocognitive Study (ARIC-NCS) Renewal 4 of 5

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Country

USA

Title of project or programme

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Source of funding information

NIH (NIA)

Total sum awarded (Euro)

€ 2,718,382.57

Start date of award

07/07/2010

Total duration of award in years

3

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

mild cognitive impairment, Neurocognitive, Dementia, vascular contributions, cognitive testing

Research Abstract

? DESCRIPTION (provided by applicant): ARIC Neurocognitive Study (ARIC-NCS) Renewal 1 of 5 Johns Hopkins Washington County Field Center Principal Investigator (Josef Coresh, MD, PhD). Rationale: Dementia and mild cognitive impairment (MCI) pose a large and increasing

health and societal burden on the aging US population and ARIC is uniquely suited to contribute critical information on the vascular, and potentially preventable, contributions to dementia and MCI incidence. Progress: ARIC NCS (Visit 5: 2011-13) measured a battery of cognitive tests on ARIC participants aged 70- 89 and all study goals were met or exceeded, completing 6,538 exams, 2009 MRIs (520 in African-Americans) with a large number of dementia and Mild Cognitive Impairment (MCI) cases currently being adjudicated. Early papers were submitted within a month of completion of data collection and promising work is ongoing (~50 manuscript proposals). Collection of cognitive decline in late-life is needed and time sensitive since the cohort is experiencing ~5% annual mortality (mean age 78 years). Design: Follow-up cognitive testing (~30-year f/u, 2015-2018), at ages where cognitive decline begins to manifest across several domains or accelerates, thus providing many additional, diverse outcomes in the ARIC cohort (15,792 men and women ages 45-65 recruited in 1986-1989 and followed with detailed examinations). Outcomes: The late life cognitive outcomes targeted in the renewal differ from the one-time static measures of cognitive performance now available from the ARIC NCS baseline exam. A. Decline in global cognitive ability, executive function/processing speed, memory, and language – assessed during in ~4214, ~4 years after V5 (more comprehensive than possible in previous visits which had a more limited 3 test battery similar to older cardiovascular studies; 2nd visit in oldest subset). B. Incidence of MCI and dementia – detect ~1,521 dementia 1,134 MCI incident cases using procedures established after NCS V5 (2011-2013; expanded ARIC's semi-annual calls; response rate ~90%). C. Progression from MCI to dementia – following the 1,402 MCI cases identified at V5. Aims: We will study a wealth of modifiable vascular risk factors and measures of microvascular disease and atherosclerosis in midlife, many not available in other studies of cognition, for their contribution to late life cogntive decline and physical function. We will study the detailed 3T brain MRI imaging at visit 5 as a risk factor for cognitive decline at older age. We will determine if any of these associations are different in African- Americans, where longitudinal cognitive data are nearly non-existent and vascular burden is high, than in white ARIC participants. We will share these data all ARIC ancillaries (Appendix 4), including detailed genetic and biochemical studies across the lifespan. Summary: This NCS visit (V6: 2015-2018; V7: 2017-2018 in oldest subset) will advance knowledge about the potentially modifiable vascular contribution to cognitive decline in late life and provide the cornerstone for other synergistic ancillary studies by a large community of investigators which would not otherwise be possible.

Lay Summary

PUBLIC HEALTH RELEVANCE: ARIC-NCS renewal (2015-2018) will study cognitive decline at old age and the transition from mild-cognitive impairment to dementia. It builds on the initial phase of the study (2010-2014) which related midlife risk factors (measured at age 45-65 years) to cognitive decline over the next 25 years when detailed data was collected on cognition, cardiovascular status on 6500 people with brain MRI data on 2,000 individuals. This proposal will follow all individuals for incidence of mild cognitive impairment (MCI) and dementia and include an examination of 4214 individuals. The public health relevance is evident given the growing magnitude of dementia and mild cognitive impairment, the realization of a strong association with vascular disease, and the reasonable assumption that the risk of dementia and mild cognitive impairment, like strokes, can be substantially reduced by risk factor modification.

Further information available at:

Types:

Investments > €500k

Member States:
United States of America

Diseases:
Alzheimer's disease & other dementias

Years:
2016

Database Categories:
N/A

Database Tags:
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