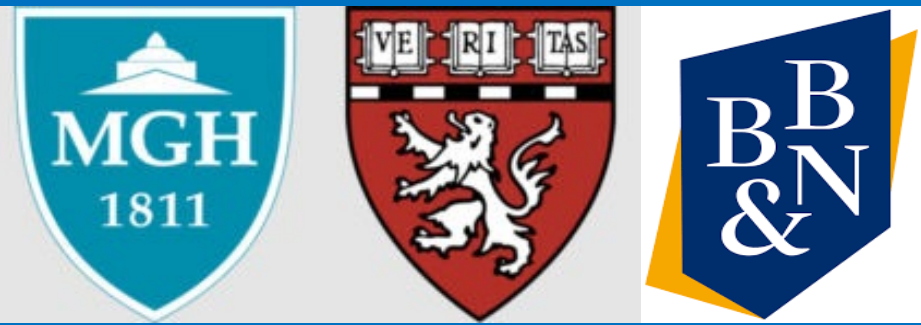


Incidence and risk factors of dementia among 85 years old participants of National Alzheimer’s Coordinating Center

Bradley Shen¹, Liu Chen ², Chao-Yi Wu ², Hiroko Dodge ²



- 1. Buckingham Browne & Nichols School, Cambridge, MA
- 2. Massachusetts ADRC, Massachusetts General Hospital, Harvard Medical School, Boston, MA,

Correspondence: bradleyshen1021@gmail.com; hdodge@mgm.harvard.edu

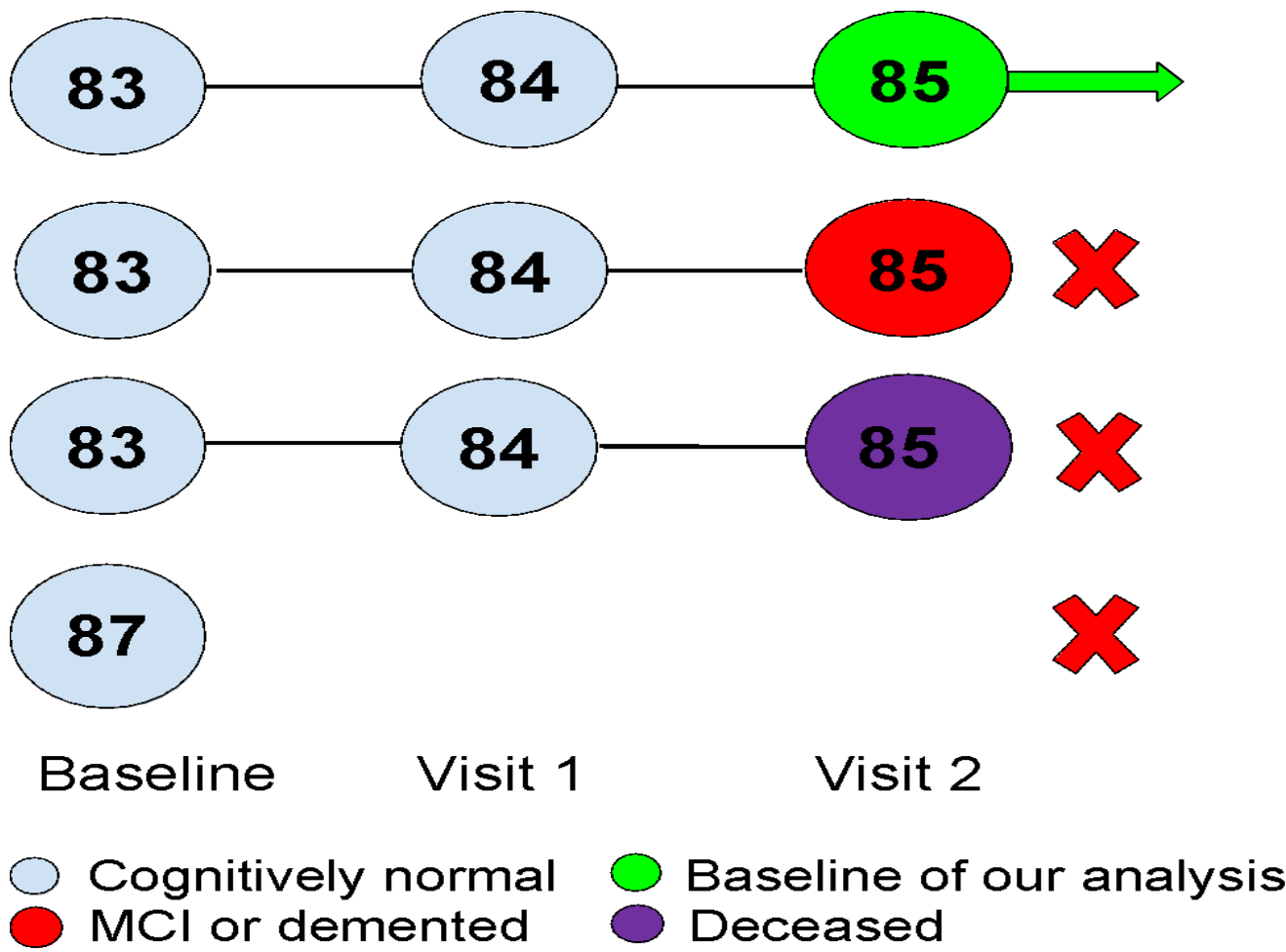
In-person
poster board
number
720

INTRODUCTION

There has been a steady rapid growth in the population of the oldest old, ages 85 and older. Although there have been ample studies on the incidence of dementia and mild cognitive impairment (MCI) and risk factors among the general elderly, similar studies specific to the oldest old are rare. Therefore, we conduct a study of the incidence and risks of dementia in this population. The knowledge can be used to increase awareness of risk factors in the oldest old and guide appropriate intervention strategies to reduce dementia risk.

METHODS

- **Data:** National Alzheimer’s Coordinating Center (NACC) Uniform Data Set version 3.0 (<https://www.nacccdata.org/>)
- **Design:** NACC Participants were included provided they were age 85 at baseline or follow up visit, and were free of dementia or mild cognitive impairment (MCI) at that point. Baseline is defined as the date of the annual visit, where the participant reached 85 years old in the corresponding year
- **Risk factors:** Depression, hypertension, cholesterol, smoking and other factors.
- **Analysis:** Poisson regression to estimate the incidence rate of dementia/MCI. Standard error and 95% confidence interval (CI) were calculated using robust estimation. Bonferroni method was used to account for multiple comparisons.



RESULTS

of subjects included: 2014
Male: 39% College education: 35%
Average follow-up: 4.9 years

Incidence rate of dementia and MCI:
39 and 61per 1,000 years

Risk factors for dementia/MCI
(adjusted for gender and education)

Components in the global depression score associated with Dementia or MCI (adjusted for gender and education):
Dementia
“Boredom” (RR= 1.86, 95% CI: 1.32-2.64, p<0.001) and “Problems with memory” (RR=1.79, 95% CI: 1.35-2.35, p<0.001)
MCI
“Activities dropped”, “Feeling life is empty”, “Preference to stay home”, “Problems with memory”, “Feeling worthlessness”, “Feeling others are better off” and “Not satisfied with life”

Characteristics	Risk Ratio	Dementia			MCI		
		p value	95% CI	Risk Ratio	p value	95% CI	
No college	1.21	0.06	0.99-1.49	1.21	0.004	1.06-1.38	
Hearing loss	0.8	0.05	0.64-1.00	1.22	0.003	1.07-1.41	
Cholesterol	1.12	0.44	0.76-1.22	1.12	0.4	0.86-1.44	
Depression (past 2 yrs)*	1.44	0.01	1.07-1.92	1.2	0.08	0.98-1.46	
Traumatic brain injury	0.96	0.8	0.66-1.37	1.08	0.48	0.87-1.35	
Smoking	1.27	0.04	1.01-1.59	1.22	0.007	1.05-1.42	
global depression score>5**	1.44	0.16	0.87-2.43	1.88	<0.001	1.42-2.47	
global depression score	1.09	<0.001	1.04-1.15	1.11	<0.001	1.07-1.14	
Obesity	0.99	0.92	0.74-1.31	0.7	0.001	0.56-0.87	
Alcohol	2.46	<0.001	1.85-3.29	2.66	0.09	0.87-8.21	
Diabetes	1.11	0.62	0.76-1.6	1.16	0.25	0.9-1.5	
Hypertension	1.31	0.03	1.03-1.66	0.98	0.73	0.84-1.13	

Red p value: Statistically significant after Bonferroni adjustment, * From medical history questionnaire, ** Geriatric Depression Scale (GDS-15)

INTERPRETATIONS

- After multiple comparison adjustment, global depression score (GDS) is the only statistically significant risk factor for both dementia and MCI with each one point increase associated with 9% and 11% increase in the risk of dementia and MCI, respectively.
- Among GDS component, “Boredom” has an 86% increase in the risk of dementia and “Feeling life is empty” has an 93% increase in the risk of MCI.

CONCLUSIONS

- Although this cohort is not representative of the general population of this age group, our results suggest that the incidence rate of dementia and MCI among the oldest old is not substantially higher than that of younger elderly.
- Depression is a key risk factor for the progression of cognitive decline.
- Attention should be taken to focus on enhancing the awareness of the impact of depression on cognitive decline, and direct appropriate intervention to prevent depression.

Acknowledgement: We thank the National Alzheimer’s Coordinating Center (NACC) for providing the data.