implications for both the conceptualization and operationalization of cognitive reserve.

P1-182 GLYCEMIC CONTROL AND RISK OF DEMENTIA IN A COHORT OF PATIENTS WITH TYPE 2 DIABETES

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Background: Type 2 diabetes is associated with an increased risk of dementia, Alzheimer's Disease, and cognitive decline, although the exact mechanisms remain unclear. Recent evidence has suggested that hyperinsulinemia, a consequence of poor glycemic control, is implicated in the deposition of amyloid beta plaques. Effective glycemic control lowers risk of several diabetes-associated complications including stroke and neuropathy. Yet, whether glycemic control is associated with dementia risk is unknown. **Objective(s):** The goal of this study was to determine whether level of glycemic control, measured as glycosylated hemoglobin (HbA1c), is associated with risk of incident dementia in a diverse cohort of type 2 diabetic men and women. **Methods:** We studied 22,852 members of the Kaiser Permanente of Northern California Diabetes Registry (66% caucasian, 10 % black, 11 % asian, 10 % latino, 3% native-american or other, 44% female), all whom took a survey between 1994-1996, were above age 50 at time of survey (mean age 66), and had at least one HbA1c measured between 1994-1996. Incident dementia was identified through outpatient and inpatient medical records from January 1, 1997-May 30, 2005. Time to dementia diagnosis was analyzed with Cox proportional hazards models adjusted for age, education, race, sex, BMI, diabetes duration, diabetes treatment, and cardiovascular disease. Patients were censored at time of dementia diagnosis, loss to membership, death or end of study period May 30, 2005. **Results:** 2488 participants (11%) were diagnosed with incident dementia. HbA1c was associated with dementia (continuous HR=1.03, 95% CI 1.01-1.05). Compared to those with a HbA1c less than 10 (N=19318) those with levels between 10 and 11.9 (N=2286) were 16% more likely to have dementia (HR=1.16, 95% CI 1.01-1.32); those with levels between 12 and 14.9 (N=1143) were 25% more likely (HR=1.25 95% CI 1.03-1.53); and those with levels greater than 15 (N=105) were 83% more likely (HR=1.83, 95% CI 1.01-3.65). **Conclusions:** These results suggest a graded association of higher HbA1c levels with risk for dementia, with a possible threshold at approximately 9.9% Future studies are needed to confirm that interventions which lower HbA1c lead to lower risk for dementia.

P1-183 FREQUENCY OF CARDIAC DISEASE, VASCULAR DISEASE AND CEREBRAL WHITE MATTER HYPERINTENSITIES IN ELDERLY PERSONS WITH DEMENTIA

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Background: Alzheimer's Disease (AD) and Vascular Dementia (VaD) are associated with cardiovascular risk factors and cerebrovascular disease. We examined whether measures of subclinical structural and functional heart disease, atherosclerosis, and cerebral white matter hyperintensities (WMH) differ among persons with AD, VaD, stroke without dementia, and elderly without dementia or stroke. **Methods:** WMH, subclinical structural and functional heart abnormalities and atherosclerosis were assessed using magnetic resonance imaging, transthoracic echocardiography and extracranial doppler sonography, respectively, and compared among 91 persons with AD, VaD, stroke without dementia, and elderly without dementia or stroke. **Results:** In multivariate regression analyses, persons with AD were more likely to have parietal WMH, aortic valve regurgitation, left ventricular (LV) hypertrophy, stenosis of the common carotid artery (CCA) and increased intima media thickness (IMT) compared with controls of similar age and sex. These abnormalities were similar to those of individuals with stroke or VaD.

	Control Subjects (n=32)	Alzheimer's Disease (n=18)	Vascular Dementia (n=9)	Stroke Without Dementia (n=16)
WMH, mean (SD)				
Total burden	20.2 (10.5)	25.2 (13.3)	29.2 (11.5)	20.0 (14.0)
Frontal caps	1.2 (0.5)	1.5 (0.5)	1.4 (0.5)	1.5 (0.6)
Frontal lobe	3.3 (1.7)	4.0 (1.9)	4.8 (1.8)	4.0 (2.2)
Temporal lobe	1.3 (1.4)	1.8 (1.8)	2.8 (1.9)	1.6 (1.8)
Parietal lobe	2.7 (1.6)	3.9 (1.9)*	4.2 (1.9)*	2.9 (2.2)
Occipital lobe	2.4 (1.4)	2.8 (1.5)	2.8 (2.1)	2.9 (2.1)
Echocardiographic measures, n (%)				
Aortic Valve Thickening	19 (59.4)	14 (77.8)	6 (66.7)	13 (81.3)
Aortic Valve Regurgitation	10 (31.3)	12 (66.7)*	6 (66.7)*	9 (56.3)
LV Hypertrophy	5 (62.5)	15 (83.3)*	12 (80.0)	16 (50.0)
Reduced LVEF	2 (6.3)	4 (23.5)*	1 (11.1)	2 (12.5)
Wall motion abnormalities	2 (6.3)	5 (29.4)*	1 (11.1)	3 (18.8)
Doppler sonographic measures				
CCA stenosis, n (%)	2 (8.7)	6 (46.1)*	3 (50.0)*	5 (29.4)
CCA plaques, n (%)	2 (8.7)	6 (46.1)*	2 (33.3)	5 (29.4)
IMT, mean (SD)	1.4 (0.9)	2.7 (0.8)*	2.5 (0.1)*	2.5 (0.8)*

* Significant at a 0.05 level versus control group, based on analysis of variance for continuous data and χ^2 test for categorical data.

Conclusion: Persons with AD are more likely to have WMH and subclinical indicators of atherosclerotic and cardiovascular disease compared to controls of similar age and gender. These abnormalities are similar to those of individuals with stroke or VaD. These findings are consistent with the hypothesis that subclinical cardiovascular disease and cerebral vascular disease contribute to the pathogenesis of AD. Clinicians need to be aware that patients with dementia are more likely to have subclinical vascular disease that may require intervention.

P1-184 ASSOCIATION BETWEEN DEPRESSIVE SYMPTOMS, MAJOR DEPRESSIVE EPISODE AND COGNITIVE DEFICITS IN THE ELDERLY. THE 3C STUDY

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Background: Coexistence of depression with cognitive impairment in late life is well documented but the direction of the association is still discussed. **Objective(s):** To study the relation between depressive symptoms, major depressive episode and cognitive deficits. **Methods:** The 3C study is a population based cohort that enrolled 9294 subjects aged 65 years old and over. Subjects had an evaluation of cognitive performance using several tests including Mini-Mental State Examination(MMSE). Depressive symptoms were measured using Center for Epidemiologic Studies-Depression(CES-D) scale and a diagnosis of major depressive episode (MDE) (current or past) was established using Mini International Neuropsychiatric Interview. High depressive symptomatology (HighDS) was defined as a CES-D score≥16 for men and ≥23 for women. Associations between HighDS, MDE and cognitive performances were investigated using analysis of covariance adjusting for age, gender, education and psychotropic drug intake. Subjects demented at baseline were excluded (n=201). Subjects' mean age was 74 years old. Lifetime prevalence of MDE was 11.5% and 1.8% of subjects had current MDE. Prevalence of HighDS was 13.5%. We observed a significant association between HighDS and lower cogni-