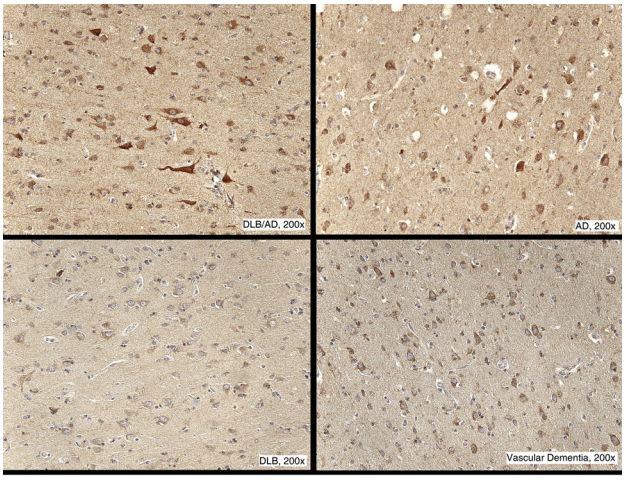

Figure 2. *ITGA7* neuronal cytoplasmic immunoreactivity in post-mortem brain tissue. Mixed DLB/AD and AD cases demonstrate stronger neuronal cytoplasmic immunoreactivity for *ITGA7* when compared to vascular dementia and DLB cases. *ITGA7* immunoreactivity is strongest within neurons containing neurofibrillary tangles.

autopsy-confirmed mixed AD/DLB cases (age < 75 years, n=143) were screened against older, autopsy-confirmed pure AD controls (age > 85 years, n=274) and clinically-defined healthy controls (age > 80 years, n=4572). Variants seen in at least two dual path cases and none of the older, pure AD controls or healthy controls were examined further. For the remaining variants, we searched other neurodegenerative exome databases to determine their specificity to mixed AD/DLB pathology. For our top variant we performed immunohistochemical staining of autopsy-confirmed AD/DLB mixed pathology brain tissue. Finally, we explored potential functional effects of the variant by examining gene expression in post-mortem temporal cortex RNA-seq data from AD cases (n=82) and controls (n=80). **Results:** The initial screening process yielded eleven variants present in at least two dual pathology cases and none of the healthy controls or older pure AD cases. Of these, we focused on rs76938320-A (NP_001138468.1:p.Ser700Leu, MAF=0.0002) on exon 18 of *ITGA7* because of its predicted probable damaging effect using *in silico* prediction tools, its presence in three younger AD cases (age < 80 years) in ADSP, its high frequency in the ALS exome database, and the finding of a homozygous carrier with TDP43 and tau pathology. *ITGA7* transcript isoforms that contain exon 18 show significantly higher expression in AD temporal cortex tissue when compared to controls ($P < 0.001$) in the Mayo Clinic Transcriptomics data set. Immunohistochemical staining of AD, AD/DLB, DLB, and vascular dementia brain tissue suggest that AD and AD/DLB tissue express higher levels of *ITGA7* than vascular controls and pure DLB. **Conclusions:** Convergent data from exome sequencing, immunohistochemical stains, and transcriptomic analysis suggest that this *ITGA7* variant may predispose not only to mixed AD/DLB pathology but to the development of multiple proteinopathies.

SUNDAY, JULY 16, 2017
ORAL SESSION
O1-04
EPIDEMIOLOGY: SOCIAL DISADVANTAGE/INEQUALITIES

O1-04-01 RACIAL DISPARITIES IN COGNITIVE AGING TRAJECTORIES IN LARGE LONGITUDINAL STUDIES IN NEW YORK AND CHICAGO

Laura B. Zahodne[1,2], Lisa L. Barnes[3,4], Alden L. Gross[5,6], David A. Bennett[3], Richard Mayeux[7], Jennifer J. Manly[1], *[1]Columbia University Medical Center, New York, NY, USA; [2]University of Michigan, Ann Arbor, MI, USA; [3]Rush University Medical Center, Chicago, IL, USA; [4]Rush Alzheimer's Disease Center, Chicago, IL, USA; [5]Johns Hopkins Center on Aging and Health (COAH), Baltimore, MD, USA; [6]Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA; [7]Columbia University, New York, NY, USA. Contact e-mail: lzahodne@umich.edu*

Background: Divergent findings across studies offer an opportunity to explore mechanisms underlying racial disparities in cognitive aging. **Methods:** Confirmatory factor analysis was used to harmonize longitudinal cognitive outcomes across the Washington Heights-Inwood Columbia Aging Project in New York and the Rush Memory and Aging Project and Minority Aging Research Study in Chicago (total N=3,584; 45% Black) into a global cognition summary factor. Latent growth curve models were used to quantify racial disparities in cognitive decline and identify genetic, demographic, socioeconomic, health, and study characteristics that accounted for cohort differences in disparities. **Results:** Independent of race, participants in New York exhibited lower initial cognitive level than participants in Chicago, but rates of cognitive decline were similar across studies. Independent of study, Blacks exhibited lower initial cognitive level and steeper cognitive decline than Whites. Race by study interactions indicated that racial disparities in initial cognitive level were larger in Chicago, but racial disparities in cognitive decline were larger in New York. These differences were at least partially attributable to study/race differences in region of birth, years of education, income, depression, and/or representativeness of the study catchment area. **Conclusions:** Findings from this study suggest that cohort differences in racial disparities in cognitive aging are due, at least in part, to migration patterns, regional characteristics, and recruitment strategies targeting minority elders.