with data on BMI/weight both at baseline and the 6-year follow-up were followed to detect subsequent incident dementia cases. BMI change was assessed as the percentage of the difference between BMI at baseline and the initial 6-year follow-up and categorized into large (>10%) or moderate (5–10%) loss, stable (≤5%), and moderate (5–10%) or large (>10%) gain. Weight change (difference between weight at baseline and the 6-year follow-up) was categorized into large (>7.5 kg) or moderate (2.5–7.5 kg) loss, stable (≤2.5 kg), and moderate (2.5–7.5 kg) or large (> 7.5 kg) gain. Dementia was diagnosed following the DSM-IV criteria. Data were analyzed using Cox regression models.

Results: During the follow-up (median 5.78 years), 102 incident dementia cases developed. BMI/weight change showed U-shaped associations with dementia. Compared with stable BMI, the hazard ratios (95% confidence intervals) of dementia were 2.93 (1.72–4.91) for large BMI loss and 2.61 (1.09–5.54) for large BMI gain. Similar results were observed for a large weight loss (2.92 [1.67–5.07]) or gain (2.95 [1.16–6.53]). These associations became stronger among participants carrying an ApoE ε4 allele.

Conclusion: Both large bodyweight loss and gain are associated with a higher risk of dementia, especially among ApoE ε4 carriers.

ASSOCIATION OF BLOOD CELL PARAMETERS OF PERIPHERAL INFLAMMATION WITH BRAIN IMAGING MEASURES

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Neutrophil to lymphocyte ratio (NLR), red cell distribution width (RDW), and mean platelet volume (MPV), are easily measured circulating blood cell parameters that reflect chronic peripheral inflammation which increases risk for dementia and Alzheimer's disease (AD). We investigated the cross-sectional association between these blood cell parameters and brain MRI measures, including total cerebral brain volume (TCBV) as percentage of total intracranial volume (TCV) to correct for differences in head size, hippocampal volume (HPV) and log transformed white matter hyperintensity (WMH) volume, in the Framingham Heart Study (FHS) cohorts. We identified 2882 FHS participants 25 to 92 years of age (mean 59 years), 53% women, who attended an exam that included a complete blood cell count sample and received a brain MRI within five years of blood draw. We used linear mixed effect models to examine associations, adjusting for age, age^2, sex, education, cohort, time between blood draw and MRI, prevalent cardiovascular disease, C-reactive protein, APOE-ϵ4 genotype and TCV for HPV and WMH, and accounting for familial correlation using a random effect. We observed significant ($p \leq 0.01$) associations between higher RDW and smaller TCBV, and between elevated NLR and larger WMH volume. Analysis on an older subgroup (age ≥60 years, mean 71 years, n=1357) demonstrated larger effect sizes and additional significance between increased RDW with smaller HPV. We conclude that chronic peripheral inflammation as measured by NLR and RDW associates with MRI measures of brain aging (TCBV, HPV) and vascular brain injury (WMH) in FHS, with stronger impact in participants ≥60 years.

CHOOSING UNWISELY: DISSEMINATION NEEDS OF PRIMARY CARE PROVIDERS OF PATIENTS WITH ALZHEIMER'S DISEASE

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Choosing Wisely is a well-known campaign to disseminate evidence-based clinical practices to providers and patients to drive care decisions, with geriatrics recommendations released in 2013. In December 2019, we aimed to determine what the dissemination needs of primary care providers were towards these recommendations. We developed common clinical scenarios with follow-up survey questions, relative to the care of people with Alzheimer's disease (AD) and utilizing Choosing Wisely geriatrics recommendations. The survey was distributed online to a national cohort of providers. Providers were also asked to rate their confidence level and rationale for clinical choices. Results were analyzed used mixed methodology, with constant comparative analysis utilized for qualitative responses. Nationally from 41/50 states, 211 providers responded, 72% female, with occupations of physician (36%, 77), advanced practice nurse (50%, 106) and physician assistant (13%, 28), with family practice (63%, 142) and internal medicine (20%, 43) the most prominent fields. Results revealed erroneous geriatric practices, including 1.)checking urinalysis for mental-status changes (55%, 116), 2.)treating asymptomatic bacteria with unnecessary antibiotics (59%, 124), 3.)placement of gastric tubes in end-stage dementia (11%, 23). Qualitative analysis of rationale for incorrect responses revealed knowledge misconceptions (e.g.feeding tube would help avoid aspiration). Confidence levels were high among providers as 75.9% rated themselves as above average, yet did not correlate to clinical errors. Choosing Wisely geriatrics recommendations are not being followed by some providers. Highly confident providers made errors similar to lower confident providers. New ways to disseminate geriatric recommendations are needed to improve the care of patients with AD.

DETECTING EARLY SIGNS OF ALZHEIMER'S DISEASE AND RELATED DEMENTIA ONSET FROM THE EHR

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As dementia is widely under-detected, a predictive model using electronic health records (EHR) could provide a method for early screening to implement preventive strategies. There