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THE ASSOCIATION OF NUTRITIONAL STATUS WITH BRAIN ATROPHY AND CEREBROVASCULAR LESIONS ON MRI IN A COHORT OF GERIATRIC OUTPATIENTS

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Please indicate your professional occupation: Dietitian

The presenting author fulfills the above conditions and wants to apply for a travel award: No

Rationale: Little information exists on the relation between malnutrition and brain atrophy and cerebrovascular lesions.

Methods: In 359 geriatric outpatients nutritional status was assessed by MNA and by vitamin B1, B6, B12, and folic acid levels. White Matter Hyperintensities (WMHs), Global Cortical brain Atrophy (GCA) or Medial Temporal lobe Atrophy (MTA) on MRI were quantified using visual rating scales. Cognitive functioning was assessed by neuropsycological examination (n=192) or by MMSE. Logistic regression analyses were performed to associate MNA categories and micronutrients (per SD decrease or absolute deficiency) with severe WHMs, GCA and MTA. All analyses were adjusted for age, sex, education, comorbidities, alcohol use and smoking and MNA scores were additionally adjusted for vitamin B levels. Analyses were repeated after stratification for cognitive status (healthy n=94, unhealthy n=265).

Results: Mean age was 80 (SD 7) years, 13% were malnourished, and 55% were at risk of malnutrition. Vitamin deficiencies were observed in 5% (B1), 1.7% (B6), 8.1% (B12), and 1.9% (folic acid).

Malnutrition and risk of malnutrition were associated with an increased risk of having severe WHMs, ORs (95%CI) 2.15 (1.10 – 4.22) and 2.98 (1.25-7.09). Results held after additional adjustment for B-vitamin status. Stratification for cognitive status showed similar results in cognitively (un)healthy patients.

Lower vit B1 and vit B12 levels were associated with increased risk of WMHs (OR per SD decrease vit B1 1.49 (1.08-2.08), OR for absolute vit B12 deficiency 2.55 (1.04-6.26)).

Conclusion: Malnutrition and vit B1 and B12 deficiencies were associated with increased risk of WMHs, independent of each other and of cognitive status. Underlying mechanisms need to be further clarified and it also needs to be studied whether these findings are modifiable by nutritional interventions.

Disclosure of Interest: None Declared

Keywords: malnutrition, MRI