



Vitamin D concentration and lateral cerebral ventricle volume in older adults

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Résumé en anglais	<p>Scope Vitamin D deficiency is associated with an enlargement of the lateral cerebral ventricles in rodents. The effect of low serum 25-hydroxyvitamin D (25OHD) on lateral cerebral ventricle volume has not been studied yet in humans. The purpose of this cross-sectional study was to determine whether vitamin D deficiency was associated with greater lateral cerebral ventricle volume in older adults. Methods and results Ninety-two Caucasian community-dwellers with no clinical hydrocephalus (mean, 72.2 +/- 6.2 years; 46.7% female) were divided into two groups according to serum 25OHD concentration (deficiency <= 50 nmol/L; normal > 50 nmol/L). Cerebral ventricular volume was quantified using semi-automated software from three-dimensional T1-weighted MRI. Age, gender, body mass index, blood pressure, education level, Mini-Mental State Examination, white matter lesions, and serum calcium concentrations were used as covariates. There was an inverse linear association between 25OHD concentration and ventricular volume (p = 0.049). Compared to individuals with normal 25OHD, those with 25OHD deficiency (n = 33) had 28% larger lateral ventricles (46.9 +/- 26.8 mL versus 36.6 +/- 16.4 mL, p = 0.026). Vitamin D deficiency was associated with an increase in ventricular volume (adjusted beta = 16.55, p = 0.023). The ventricular enlargement involved ventricle bodies (p = 0.025) but not temporal horns (p = 0.112). Conclusion Serum 25OHD deficiency was associated with larger lateral cerebral ventricles. These findings provide a scientific base for vitamin D replacement trials.</p>

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