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Purpose: Recent studies have implicated the human cytomegalovirus (HCMV) as a possible pathogen for causing hypertension. We aimed to study the association between HCMV infection and hypertension in the United States National Health and Nutrition Examination Survey (NHANES).

Methods: We analyzed data on 2979 men and 3324 women in the NHANES 1999-2002. We included participants aged 16-49 years who had valid data on HCMV infection and hypertension.

Results: Of the participants, 54.7% had serologic evidence of HCMV infection and 17.5% had hypertension (P<0.001). The prevalence of both increased with age (P<0.001). Before adjustment, HCMV seropositivity was significantly associated with hypertension in women (OR=1.63, 95% CI=1.25-2.13, P=0.001) but not in men. After adjustment for race/ethnicity, the association between HCMV seropositivity and hypertension in women remained significant (OR=1.55, 95% CI=1.20-2.02, P=0.002). Further adjustment for body mass index, diabetes status and hypercholesterolemia attenuated the association (OR=1.44, 95% CI=1.10-1.90, P=0.010). However, after adjusting for age, the association was no longer significant (OR=1.24, 95% CI=0.91-1.67, P=0.162).

Conclusions: In this nationally representative population-based survey, there is no strong evidence that HCMV is a significant cause of hypertension. Hypertension in women is associated with HCMV, but this could be explained partly by age.