

C Li¹, NR Samaranayake¹, KL Ong², HK Wong¹, BMY Cheung¹

¹Department of Medicine, The University of Hong Kong, Queen Mary Hospital, Hong Kong

²Lipid Research Group, Heart Research Institute, Sydney, NSW 2042, Australia

Introduction: Human cytomegalovirus (HCMV) infection is common and is thought to play a part in cardiovascular disease. Recent studies suggested a link between HCMV infection and hypertension. Therefore we studied the association between HCMV and hypertension in the United States National Health and Nutrition Examination Survey 1999-2002.

Methods: We analysed data on 3022 men and 3393 women in the survey. We included participants aged 16 to 49 years who had valid data on HCMV infection and hypertension.

Results: Of the participants, 54.9% had HCMV infection and 15.9% had hypertension. There were ethnic differences in HCMV infection ($P<0.001$) and hypertension ($P<0.001$). Before adjustment, HCMV infection was strongly associated with hypertension in women (OR=1.60; 95% CI, 1.18-2.17; $P=0.004$) but not in men. After adjustment for race/ethnicity, the association between HCMV infection and hypertension in women remained significant (OR=1.51; 95% CI, 1.10-2.06; $P=0.012$). Further adjustment for BMI, diabetes status and hypercholesterolemia attenuated the association (OR=1.41; 95% CI, 1.02-1.95; $P=0.038$). However, after adjusting for age, the association was no longer significant (OR=1.20; 95% CI, 0.84-1.71; $P=0.30$).

Conclusions: In this large population-based survey, there is no strong evidence that HCMV is a significant cause of hypertension. Hypertension in women may be associated with HCMV, but this could be explained at least partly by age. Further studies are needed before definite conclusions can be drawn.