An association of an antibody against *Chlamydia pneumoniae* and coronary heart disease observed in Japan

*Chlamydia pneumoniae* is an important cause of acute respiratory illness, including pharyngitis, bronchitis and pneumonia. However, there has been accumulating evidence implicating *C. pneumoniae* in atherosclerosis. Saikku et al. first reported on an antibody against *C. pneumoniae* and coronary heart disease (CHD) in 1988. Subsequently, Short et al. and Kuo et al. detected *C. pneumoniae* in coronary artery atherosclerotic plaques by immunocytochemistry, polymerase chain reaction and electron microscopy. Their findings have been confirmed by other investigators worldwide. We have also investigated the association of *C. pneumoniae* antibody and angiographically diagnosed CHD in Japan.

The study was conducted in four separate hospitals in Okayama, Osaka and Shizuoka, Japan between April 1993 and December 1994. There were 160 patients with CHD (34–81 years of age, mean 60.0 years; 115 males and 45 females). Cases were defined as patients who had at least one coronary artery lesion occupying at least 50% of the luminal diameter by angiography. One hundred and fourteen patients had myocardial infarction as defined by ECG and angiography. Controls who were matched for age and sex were enrolled from the patients attending the same hospitals. The criteria for inclusion were absence of signs and symptoms of CHD, as judged by a negative history and a normal resting ECG. Informed consent was obtained from all subjects. *C. pneumoniae* IgG and IgA antibodies were measured by the microimmunofluorescence (MIF) test using a Japanese isolate KK-pn15 as antigen. The serologic criteria for a positive test was a titre of greater than or equal to 1:16 for IgG or 1:8 for IgA. Logistic regression was used for statistical analysis.

The odds ratios (ORs) were 2.1 (95% confidence interval [CI], 1.2 to 3.9) for IgG and 2.5 (95% CI, 1.7 to 4.3) for IgA. After adjustment for other cardiovascular risk factors of age, hypertension, diabetes, cigarette smoking and serum cholesterol, the ORs were essentially unchanged at 2.2 (95% CI, 1.2 to 4.1) for IgG and 2.7 (95% CI, 1.7 to 4.4) for IgA. The adjusted ORs were greater for patients with IgG titres of greater than or equal to 1:64 and IgA titres of greater than or equal to 1:32, i.e., 4.5 (95% CI, 2.2 to 9.1) and 6.1 (95% CI, 2.4 to 15.7), respectively. The geometric mean titres of IgG and IgA were significantly higher in patients with CHD than controls (30.2 vs 20.9 for IgG, *P* = 0.0001 and 12.6 vs 6.2 for IgA, *P* = 0.0001) by the Mann-Whitney U tests.

This study confirmed the observations of an association between antibody against *C. pneumoniae* and CHD in Western nations is also present in Japan. Our results are comparable to the previous seroepidemiological studies reporting ORs of 2.0 or greater.

N. MIYASHITA*  
E. TOYOTA†  
T. SAWAYAMA†  
T. MATSUSHIMA*  

*Division of Respiratory Diseases  
Division of Cardiology,  
Department of Medicine  
Kawasaki Medical School, Kurashiki City, Okayama 701-0192, Japan

References


