Title: Serodiagnosis of mycobacterium avium-complex pulmonary disease using anti-glycopeptidolipid core antigen IgA antibody

Body: Rationale: Pulmonary diseases due to non-tuberculous mycobacteria(pNTM) has been increasing in Japan. The diagnosis of Mycobacterium avium-complex pulmonary disease (MAC-PD) is complicated. Objectives: Our aim of this study was to evaluate a serodiagnosis of MAC-PD using anti-glycopeptidolipid(GPL) core antigen IgA antibody. Methods and Results: Between April 2012 and December 2012, the levels of serum anti-glycopeptidolipid(GPL) core antigen IgA antibody were measured in 69 patients in our hospital: 53 patients with MAC-PD, 4 with non-MAC pNTM (M.kansasii, M.Scrofulaceum, M.goldonae, M.abscessus), 7 with pulmonary tuberculosis, and 5 with lung cancer. The MAC-PD group included infections with M. avium (n =28), and M. intracellulare (n = 25). The patients of MAC-PD and non-MAC pNTM fulfilled the American Thoracic Society (ATS) criteria for the diagnosis of NTM infection. None of the patients was seropositive for HIV type1 or 2. The level of serum IgA antibody to GPL core antigen was quantified using the ELISA kit. Setting the cutoff point at 0.7 U/ml resulted in 71.7% sensitivity and 93.8% specificity of diagnosing MAC-PD. Of the 4 patients with Non-MAC pNTM group, only one patient with M.abscessus had positive result. All the patients of tuberculosis and lung cancer had negative results for anti-glycopeptidolipid core antigen IgA antibody. Conclusion: The ELISA kit of serum IgA antibody specific for GPL core antigen is useful for the rapid diagnosis of MAC-PD.